

HEARING DATE AND TIME: July 12, 2016 at 10:00 a.m. (Eastern Time)  
RESPONSE DEADLINE: June 24, 2016 at 4:00 p.m. (Eastern Time)

**UNITED STATES BANKRUPTCY COURT  
SOUTHERN DISTRICT OF NEW YORK**

-----X  
In re : Chapter 11 Case No.  
 :  
LEHMAN BROTHERS HOLDINGS INC., *et al.*, : 08-13555 (SCC)  
 :  
Debtors. : (Jointly Administered)  
-----X

**DECLARATION OF ANGHARAD BOWDLER  
IN SUPPORT OF THE PLAN ADMINISTRATOR'S OBJECTION  
TO DEMANDS FOR POSTPETITION INTEREST RELATED TO CLAIM NO. 28308**

I, ANGHARAD BOWDLER, pursuant to 28 U.S.C. § 1746, declare as follows:

1. I am a Director of Epiq Bankruptcy Solutions, LLC ("Epiq"), located at 777 Third Avenue, New York, New York 10017. I am over the age of 18 years and do not have a direct interest in the above-captioned chapter 11 cases. All facts set forth herein are based upon my personal knowledge or my review of relevant documents. If I were called upon to testify, I could and would testify competently as to the facts set forth herein.

2. I submit this Declaration in support of the Plan Administrator's Objection to Demands for Postpetition Interest Related to Claim No. 28308 (the "Objection").<sup>1</sup>

3. Attached as Exhibit A hereto is a true and correct copy from the claims database maintained by Epiq of the "Annex to Demand for Postpetition Interest Submitted by Centerbridge Special Credit Partners II, L.P. Against Lehman Brothers Commercial Corporation" (with exhibits).

4. Attached as Exhibit B hereto is a true and correct copy from the claims database maintained by Epiq of the "Annex to Demand for Postpetition Interest Submitted by

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<sup>1</sup> Capitalized terms used but not defined herein shall have the meanings assigned to them in the Objection or the Plan, as applicable.

**HEARING DATE AND TIME: July 12, 2016 at 10:00 a.m. (Eastern Time)**

**RESPONSE DEADLINE: June 24, 2016 at 4:00 p.m. (Eastern Time)**

CCP Credit Acquisition Holdings, L.L.C. Against Lehman Brothers Commercial Corporation”

(with exhibits).

5. Attached as Exhibit C hereto is a true and correct copy from the claims database maintained by Epiq of an untitled document submitted in support of the postpetition interest demand filed by Chase Lincoln First Commercial Corporation.

6. Attached as Exhibit D hereto is a true and correct copy from the claims database maintained by Epiq of the “Annex to Demand for Postpetition Interest Submitted by Lehman Re Ltd. Against Lehman Brothers Commercial Corporation” (with exhibits).

7. I hereby declare under penalty of perjury that the foregoing statements are true and correct to the best of my knowledge, information, and belief.

Dated: June 9, 2016  
New York, New York

/s/ Angharad Bowdler  
ANGHARAD BOWDLER  
Director  
Epiq Bankruptcy Solutions, LLC



**Exhibit A**

Centerbridge Special Credit Partners II, L.P.  
Postpetition Interest Demand Annex (with exhibits)

**UNITED STATES BANKRUPTCY COURT  
SOUTHERN DISTRICT OF NEW YORK**

-----X  
:  
**In re:** :

**Chapter 11**

**LEHMAN BROTHERS HOLDINGS INC., et al.,** :

**Case No. 08-13555 (SCC)**

**Debtors.** :

**(Jointly Administered)**  
:  
:  
-----X

**ANNEX TO DEMAND FOR POSTPETITION INTEREST SUBMITTED  
BY CENTERBRIDGE SPECIAL CREDIT PARTNERS II, L.P. AGAINST  
LEHMAN BROTHERS COMMERCIAL CORPORATION**

1. On September 15, 2008 (the “Petition Date”), Lehman Brothers Holdings Inc. and several of its subsidiaries commenced a voluntary proceeding (the “LBHI Proceeding”) under chapter 11 of title 11 of the United States Code, in the United States Bankruptcy Court for the Southern District of New York (the “Bankruptcy Court”).

2. Also on September 15, 2008, Lehman Brothers International (Europe) (“LBIE”) entered into administration by order of the High Court Chancery Division of England and Wales.

3. On October 5, 2008 (the “LBCC Petition Date”), Lehman Brothers Commercial Corporation (“LBCC”) commenced a voluntary proceeding (the “LBCC Proceeding”) in the Bankruptcy Court under chapter 11 of title 11 of the United States Code. The LBHI Proceeding and the LBCC Proceeding have been consolidated for administrative purposes (the “Lehman Proceeding”).

4. On September 23, 2008, a winding-up proceeding was commenced on behalf of Lehman Re Ltd. (“Lehman Re”) in the Supreme Court of Bermuda (the “Bermuda Court”). By order of the Bermuda Court dated September 23, 2008, Peter C.B. Mitchell and D. Geoffrey Hunter were appointed as the joint provisional liquidators (the “JPLs”) for Lehman Re. The

Bermuda Court subsequently appointed Dan Schwarzmann and Garth Calow as successor JPLs for Lehman Re on April 8, 2010 and July 19, 2011, respectively.

5. On August 6, 2009, the JPLs filed a Verified Petition Under Chapter 15 for Recognition of a Foreign Main Proceeding in the Bankruptcy Court, and by order dated September 24, 2009, the Bankruptcy Court granted such recognition and other related relief (the “Chapter 15 Proceeding”). See Docket Nos. 2 and 56 in the Chapter 15 Proceeding.

6. On September 22, 2009, the JPLs, on behalf of Lehman Re, filed Proof of Claim No. 28308 (the “Claim”) against LBCC relating to certain Lehman Re funds (the “Funds”) transferred to LBCC (the “LBCC Account”) by LBIE. The Funds were subject to the terms of a custody agreement (the “Custody Agreement”) between Lehman Re and LBIE, dated March 19, 1999. LBIE transferred the funds to LBCC prior to the LBCC Petition Date in breach of the terms of the Custody Agreement.

7. On February 6, 2012, Lehman Re, LBCC, and various other parties entered into a settlement agreement (the “Settlement Agreement”) that provided for, among other things, the Claim to be allowed in the amount of \$87,621,000.00, based on the balance of the LBCC Account in September 2008 and the application of certain exchange rate adjustments.

8. On March 22, 2012, the Bankruptcy Court entered orders in the Lehman Proceeding and the Chapter 15 Proceeding approving the Settlement Agreement. See Docket No. 27085 in the Lehman Proceeding and Docket No. 136 in the Chapter 15 Proceeding.

9. Pursuant to an agreement dated November 18, 2013, Lehman Re assigned 36.11% or \$31,642,936.34 of the Claim to CCP Credit Acquisition Holdings, L.L.C. (“CCP”) and 19.51% or \$17,090,986.87 of the Claim to Centerbridge Special Credit Partners II, L.P. (“CSCP”). Chase Lincoln First Commercial Corp. (“Chase Lincoln”) ultimately acquired

portions of the CCP and CSCP holdings such that it now owns 10.05% or \$8,802,249.57 of the Claim. Lehman Re retains 44.38% or \$38,887,076.79 of the Claim.

10. In response to the Order Establishing Bar Date for Demands for Postpetition Interest Against Lehman Brothers OTC Derivatives Inc. and Lehman Brothers Commercial Corporation, which was entered by the Bankruptcy Court on March 24, 2015 (Docket No. 48966 in the Lehman Proceeding), CSCP hereby submits this annex to CSCP's Demand for Postpetition Interest from LBCC (the "Demand").

11. CSCP is not aware of an express written agreement between LBIE and LBCC governing LBIE's transfer of the Funds to LBCC and the management thereof. However, the Lehman group did have express written policies dictating the appropriate interest rate for intercompany claims. Specifically, Lehman's Business Requirement Document for its Global Cash and Collateral Management ("GCCM") system accounts for the "intercompany recover of the cost of funding" by setting the "rates at which credit and debit interest is paid...[at] the Treasury Index rate. Currently the Index rate is 1 week LIBOR flat". See Business Requirement Document GCCM § 5.3.2.3, attached hereto as Exhibit A. Further, Lehman Re's audited financial statements indicate that its accounts with Lehman affiliates accrued interest at LIBOR. See, e.g., Lehman Re Ltd. and Subsidiary, Notes to Consolidated Financial Statements § 9, attached hereto as Exhibit B.

12. The Funds in the LBCC Account were denominated in British pounds sterling. The appropriate LIBOR index, therefore, is the GBP 1 week LIBOR rate, which yielded 5.3785% (the "GCCM Rate") on October 3, 2008, the last closing yield prior to the commencement of the LBCC Proceeding on Sunday, October 5, 2008.

13. Applying the GCCM Rate to the amount of the \$87,621,000.00 Claim that remained unpaid during the period starting on the LBCC Petition Date and ending on October 2,

2014 (the date upon which total distributions by LBCC on account of the Claim totaled \$87,621,000.00), indicates that the total post-petition interest owed by LBCC on account of the Claim is \$23,872,769.75.<sup>1</sup> Attached as Exhibit C is a spreadsheet detailing the calculation of total post-petition interest owed by LBCC on account of the Claim.

14. Because CSCP holds 15.98% of the Claim, it is entitled to \$3,815,468.59 in post-petition interest from LBCC based on the GCCM Rate.

15. We understand that Lehman Re, CCP, and Chase Lincoln will submit demands for post-petition interest from LBCC with regard to their respective portions of the Claim.

16. In filing the Demand, CSCP expressly reserves all rights and causes of action that CSCP may have against LBCC. Furthermore, CSCP expressly reserves all rights to amend, modify and/or supplement the Demand in any respect.

17. Nothing contained in the Demand nor subsequent appearance, pleading, claim or suit is intended to be a waiver or release of: (i) the right of CSCP to have final orders in non-core matters entered only after de novo review by a district court judge; (ii) the right of CSCP to a jury trial in any proceeding so triable herein or, in any case, any controversy or proceeding related hereto; (iii) the right of CSCP to move to withdraw the reference with respect to the subject matter of this Demand, any objection thereto or any other proceeding which may be commenced in the Lehman Proceeding against or otherwise involving CSCP, including without limitation, any adversary proceeding that was or may be commenced by any party or committee in either the LBHI Proceeding or in the LBCC Proceeding; or (iv) any other rights, claims, actions, defenses, setoffs or recoupments to which CSCP is or may be entitled under agreements,

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<sup>1</sup> CSCP believes that if the GCCM Rate did not apply for any reason, the English statutory interest rate of 8% (the “English Statutory Rate”) would be applicable as the Custody Agreement between Lehman Re and LBIE is governed by the laws of England. See Judgments Act 1838. Applying the English Statutory Rate, the total post-petition interest owed by LBCC on account of the Claim is \$37,297,224.96.

documents or instruments, in law or equity, all of which rights, claims, actions, defenses, setoffs and recoupments are expressly reserved.

18. All notices with respect to the Demand should be sent to:

Centerbridge Special Credit Partners II, L.P.  
c/o Centerbridge Partners, L.P.  
Attn: Shanshan Cao  
375 Park Avenue, 12<sup>th</sup> Floor  
New York, NY 10152  
Email: [scao@centerbridge.com](mailto:scao@centerbridge.com)

and

Centerbridge Special Credit Partners II, L.P.  
c/o Centerbridge Partners, L.P.  
Attn: Lauren Grainer  
375 Park Avenue, 12<sup>th</sup> Floor  
New York, NY 10152  
Email: [lgrainer@centerbridge.com](mailto:lgrainer@centerbridge.com)

with copy to:

Andrews Kurth LLP  
450 Lexington Avenue  
New York, NY 10017  
Attn: David Hoyt  
E-mail: [dhoyt@andrewskurth.com](mailto:dhoyt@andrewskurth.com)

**EXHIBIT A**

**LEHMAN PROJECT FRAMEWORK**

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**Business Requirements Document**

**GCCM**

**Module One**

**Disbursements and Receipts**

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LEHMAN BROTHERS

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## 1. Version History

Version	Primary Author(s)	Update	Date
1	Philip Duggan	Initial Document	22 July 04
1.1	Philip Duggan	Completed first draft	27 August 04
1.2	Philip Duggan	Clarifications to certain items	9 September 04
1.2a	Philip Duggan	Resave as 1.2 corrupted	10 September 04
1.3	Philip Duggan	Further clarifications and extra sub-sections	15 September 04
	Nancy Chuen	Inclusion of status tree	
1.3a	Philip Duggan	Resave as 1.3 corrupted	28 September 04
1.4	Philip Duggan	Slight flow change	03 November 04
2.0	Philip Duggan	Completed second draft	03 November 04

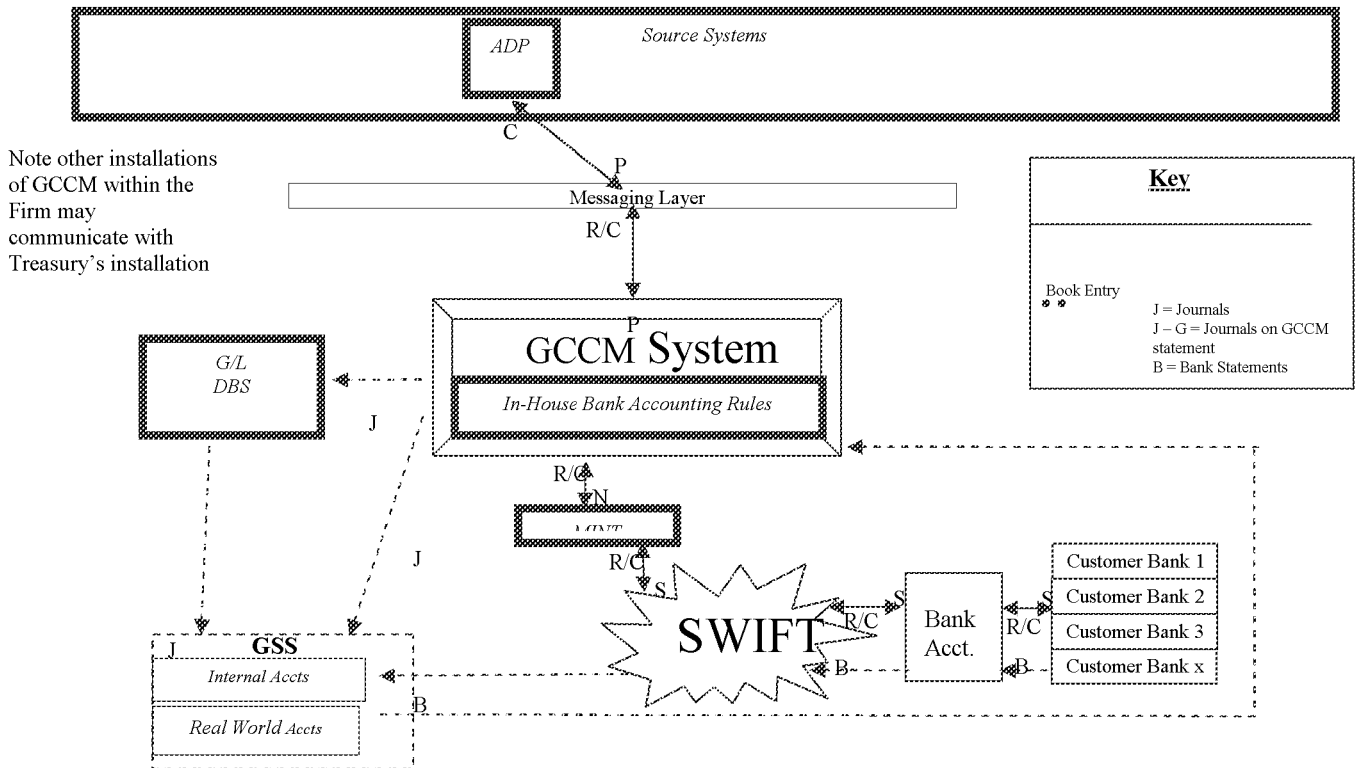
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## 2. Management Summary

GCCM Disbursements & Receipts will centralize and internalize, where possible, all of the Firm's cash flows. To that end, the system will be inclusive of all known payment activity globally, while designed with sufficient scalability and flexibility to incorporate new activity with little effort. It forms part of a larger development to create a global cash and collateral management tool for the Firm.

### 2.1. Graphical Representation – GCCM D&R



The premise of the design is that all payment activity including preadvice notifications from feeder systems will be sent to D&R for processing and each nostro account owned by the Firm will be hosted on GCCM so that CCM have the ability to manage intra-day liquidity across all entities from one consolidated view.

D&R is not intended to replace or decommission existing payment systems, though it may enable this to occur, rather it is a centralization tool for Treasury that will intermediate between existing OTG systems and the Firm's nostro agent banks. The feeder systems in use today will remain intact and will continue to provide the security, input and approval functions that they do today. The key difference is that CCM staff will no longer operate on these systems.

GCCM is to be designed so that it has the scalability to absorb new internal systems, acquisitions, new businesses / legal entities and additional currencies while interfacing with a number of payment channels including a cheque process. Moreover it will have the flexibility to cope with the Firm's existing convoluted payments and funding structures. It is to be based around extensions to standard SWIFT formatting conventions for cash messages to allow for other disbursement options and is expected to be an open platform, with data available for querying that will serve as a resource for the Firm.

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### 3. Project Scope

The following chapter outlines the basic structure of GCCM and Module One of GCCM, Disbursements & Receipts in particular. The workflow referenced in the following document can be found in appendix 10.1.

#### 3.1. GCCM Structure

GCCM is a web deployed tool designed to control the Firm's cash payment and nostro account funding processes. The proposed structure of the system is shown at the start of Appendix 10.1.1. It contains three distinct sections

- ◆ **Module One: Disbursements and Receipts** (roll-out to begin November 2005)
  - ◆ A central payment processing system.
  - ◆ An in-house bank settlement model to internalise payment traffic and nostro bank accounts.
  - ◆ Aggregation of all cash flows for funding of individual cash nostro accounts.
- ◆ **Module Two: Liquidity Management** (roll-out to begin late 2006)
  - ◆ A dashboard to monitor and predict the intraday and end of day funding requirements of securities depots.
  - ◆ Integration of real-time cash and collateral positions and same day trading activity.
- ◆ **Module Three: Liquidity Forecasting** (roll-out to begin late 2007)
  - ◆ Tactical / short term liquidity forecasting based on extensions to Liquidity Management
  - ◆ Projected cash and collateral availability.

This BRD outlines the workflow and functionality for Module One. In particular the following chapters will walk through key workflow steps of Module One in detail.

#### 3.2. Disbursement & Receipt Structure

Within Module One, the system contains:

- a payment processing function,
- an accounting function that contains the rule set for the in-house bank,
- on-line real time reporting for a limited time horizon (nine days forward and five days history),
- on-line historical reporting with a 25 month time horizon.

Beyond 25 months summary level details will be available via a separate archive database (accessed through Business Objects) containing up to 5 years worth of data and by recall of the back-up database tapes.

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The Payment Processing function contains three basic steps:

- Import of the request to pay or receive funds,
- Validation of the information sent with the request to ensure that the request can be settled and identify items that can be settled internally without a physical cash movement,
- Release of the request externally to the most optimal payment channel to minimise the Firm's external costs.

These steps will be outlined in chapter 4 and can be referenced in Appendix 10.1.2. The on-line real time reporting options will be covered as part of the accounting funding requirements in the payment processing function.

The Account function contains a number of processes to generate and record the accounting associated with the funding and settlement of the cash requests. These are:

- Generation of accounting per request
- Start of Day and End of Day processes to ensure integrity of data and generate intercompany interest
- Monthly End processes to recover interest and fee expenses for the settlement of cash processing.

These processes will be outlined in chapters 5.

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## **4. Payment and Receipt Processing and Account Balance Reporting**

### **4.1. D&R: Detail of Payment Import Control Processes - Ref 1.1**

The following chapter outlines the steps involved in importing data into GCCM D&R and exporting information from the system. A flow chart and table showing the various stages that a request goes through as it is processed is available in Appendix 10.1.2.

GCCM D&R will be a real time based system, accepting individual message representing a single payment or receipt request, and multi- thread these requests so that the platform can cope with a volume spike of 50,000 requests per hour. In turn the system should predominately release external requests real-time to the communication channel, e.g. SWIFT, chosen to send the individual request for settlement.

#### **4.1.1. Process Name: GCCM Gateway – Ref 1.1.1**

The Gateway will be used to pass messages between GCCM and other Lehman system. It will write data sent from a message generating system into the GCCM extended format and pass to GCCM Import function. In addition it will be responsible for routing messages from GCCM to other systems and controlling access to the data stored with GCCM.

##### **4.1.1.1. Basic Process Flow Incoming Requests, Internal Source – Ref 1.1.1.0:**

This section covers the main function of the Gateway which is to handle the Firm's cash settlement activity that arises as a result of the Firm's trading positions.

A number of source systems will feed cash instructions to GCCM D&R. It is expected that payment requests and preadvice notifications will be received into GCCM D&R from (at the least): RISC, ASAP, ADP, FPS, Treasury WorkStation Summit, Loan IQ, CTS, ITS, EFCash, and Walker AP/ R&R.

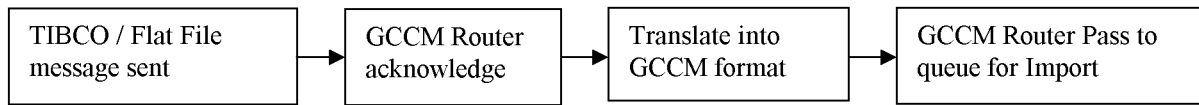
In addition it is envisaged that the GCCM Gateway would also be able to accept messages in a SWIFT format from MINT to allow traffic to be routed via MINT from internal systems or even via SWIFT for future acquisitions or business development. To allow for manual messages a web based interface will also exist that can upload payment request in bulk via a file transfer process, see section on manual input.

Note that on the flow chart Ref 1.1.1.1, OTG Traffic represents the systems listed above supported by Operations Technology Group and Finance traffic refers to Accounts Payable and Payroll activity. MINT is represented separately as Ref 1.1.1.3. TWS Summit is also noted as Ref 1.1.1.2 as this system to avoid confusion with the current TWS based Funding Hub model. The detail of each of these systems will be followed up in separate documents at the next stage in the system specification process.

Traffic released from a source settlement system or the GCCM Web based manual input process, Ref 1.1.1.4 in the diagram, will flow through to a TIBCO based router or Gateway / Adaptor function. Flat files submitted to GCCM should be read and converted into individual TIBCO messages by the Gateway.

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To ensure integrity of the Firm's payment architecture, the GCCM Gateway should authentic each originating system and acknowledge receipt of each message. Messages into and out of GCCM should be encrypt as per the Firm's current standards wherever feasible.

The Gateway will be responsible for standardising and depersonalising the messages from the source systems – for example field names, message structure, etc but will not review the content of the individual fields of each message. Specifically SWIFT code words and flags (A / D formatting) may need to be recognised to allow for source systems that send 'full formed' Swift like messages to GCCM and treated accordingly. The data should be split into the maximum number of fields and all information sent should be retained even if it is not subsequently used.

The Gateway will have responsibility for routing the traffic to the appropriate import queue for GCCM D&R, Ref 1.1.2.1 in the diagram. The function will need to pass items to a series of queues with the least payment traffic for the urgency flag set on the message.

After processing the GCCM Gateway will inform the source system that the received message has been passed to the next stage in the process. Note that at each stage in the D&R process, GCCM should publish status information via TIBCO but it will remain the source systems' responsibility to read this data.

#### 4.1.1.1.1. Required Information to generate a GCCM database record:

As a minimum the following information must be contained in the messages sent to GCCM for it to generate a payment or preadvice record.

Field	Character	Comments
System id		
System unique ref		
Time sent from System		
CCY		
Amount		
Value Date		
Business Account payee/ Receiver		
Debit / Credit indicator		
Beneficiary account		Could be GARM id, GCCM Account number or 3 <sup>rd</sup> party account id.
GCCM unique id		
GCCM status & version		



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4.1.1.1.2. Optional Information to include in a GCCM database record:

The following information can be contained in the messages sent to GCCM for the booking of payment or preadvice requests.

Field	Character	Comments
Mandatory Swift fields		
Optional Swift fields		
Other additional Info		
GARM id		
Message type		
Message priority		
Legal entity		
User who input		
User who authorised		
User who authorised 2 / released		
Internal only movement flag		
GCCM user amendment		
GCCM checks status		
Provisional Figure Indicator		
Payment to be held		Payment can only be released manually regardless of if it is to be settled through an auto release payment queue
Beneficiary's Address details		

4.1.1.1.3. Notes

1. TIBCO, MERVA / MINT and SWIFT all allow process flags to be set. GCCM will need to accept and potentially prioritise traffic based on these flags.
2. GCCM Gateway queues will be system specific but GCCM Import queues should not.
3. The GCCM Gateway may need to include a mapping table that turns source system data into GCCM appropriate data, as TWS Payment Import currently maps ASAP traffic to a TWS code.

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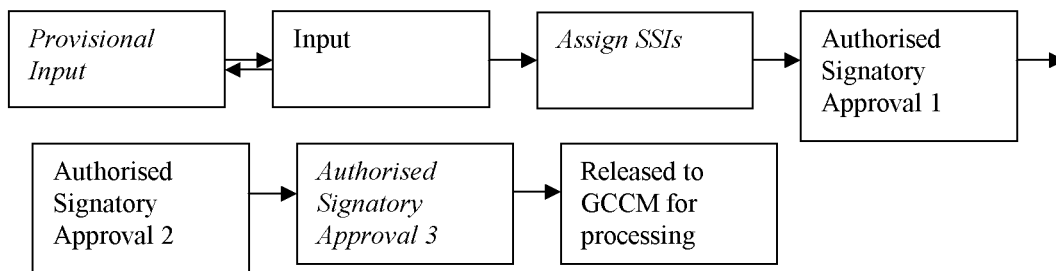
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#### 4.1.2. Process Name: Manual Cash Transfer Input - Ref 1.1.1.4

While most traffic will be created in settlement systems, manual traffic will remain. The following section outlines the process required to allow the input of such messages into GCCM

##### 4.1.2.1. Basic Process Flow: Web Input Function

Users will be expected to login to the GCCM D&R function where they will be able to select the ability to input cash messages. Note that user access to this function will be restricted and dual control requirements will exist for all messages input via the web page.



Status in italics may occur only at system level

*To maximise the BCP nature of the core GCCM D&R function, this manual entry process will be consider non-core and is effectively another feeder process to the core of GCCM. In essence the manual input function will be a separately application that can fail without affecting other parts of the D&R system.*

As a result once a message has been 'Released to GCCM for processing', it will be sent to the Gateway where it will be treated as any other source system and amendments requests will need to pass through the Gateway as the record that will be released will reside in a separate database.

It is expected that the web input process will allow both direct input and batch upload from say an Excel or CSV file to allow groups with large number of transaction request but no automated feed to input multiple requests simultaneously. This process will also be available as back-up option should an event occur to a TIBCO linkage between one of the source systems and GCCM.

##### 4.1.2.1.1. Tracking Information automatically added to record

As part of each record created via the web input function the following audit information will be retained.

Field	Character	Comments
Version Date and Time		
User		
Version		Version of message
Status		Status in version
Payment Ref		Uniquely generated by system – does not change
Security Code		Unique check sum created at release to GCCM. To be used for authenticity.

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The following sections outline the options available to users via the menu from the web input function.

#### 4.1.2.1.2. Provisional Input / Input

Once a user has decided to create a manual request and has accessed the input function, they will be presented with a basic menu giving them the ability to create a new request from scratch or a new request from a predefined Template. Note access to templates will be restricted at the user level to users within the same control (Operations) group.

New Requests all start in a Provisional Input status.

##### 4.1.2.1.2.1. Required Information:

As a minimum the following information must be completed in the New Request screen for the Input function to generate a payment or preadvice record.

Field	Character	Comments
Ordering Internal Business Account Number		Account to be debited or credited
Currency	3 code	
Currency Calendar	3 letter city code	Added once CCY input automatically
Amount	Up to 1000 bn	Debit indicates payment Credit indicates receipt
Value Date	Format should be as PC in use	4 char year Back valued inputs to be allowed
Beneficiary Account Number		Not a required field but user should be able to add GARM account number or GCCM account number If debit amount then this is where payment goes If credit amount then this is where funds are expected from - re credits see later
Users refs	Text	If supplied append to posting info and message
Additional Info	Text	If supplied append to posting info and message
Payment Urgency	Defined list	Only available to certain users?

##### 4.1.2.1.2.2. Identifying Beneficiary Details

To support users that may be not be able to supply details of the GARM id of their client, for example as they are familiar with their client's ADP or RISC accounts numbers only, D&R should allow users to

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initiate a search of GARM to identify the correct GARM id using the account numbers from one of the other settlement systems.

#### *4.1.2.1.2.3. Restricted Accounts*

Note that there is a concern about whether users should be able to create payments for all GARM ids, in case GCCM D&R could be used as way to by pass the correct margin approval processes for customer accounts. Therefore it may be that after consolation with the appropriate groups users may not be able to input payments against certain account ranges / GARM ids and instead users will be directed to process through an alternative system.

*Open question:* need to check with GARM that clients that need margin approval are contained within limited ranges rather than spread through the system; if not how do we identify clients?

#### *4.1.2.1.2.4. Available Actions*

Once user has input a basic request they should then be able to save the message into:

- A Provisional status with only certain checks being carried out,
- An 'Input Complete' status.
- New Template
- Or Cancel the message

As part of the process for saving a message into an 'Input Complete' status certain basic checks will be carried out (the basic checks are included in the notes below). Items that fail a check should go a Require Repair status and a note should be made available of why the item failed.

In a Provisional status the message can be amended and the user can then save the message into a Provisional status with only certain checks being carried out or into an 'Input Complete' status. A message can go through Provisional Input a number of times.

Items in a Require Repair status can be amended by the same user who input the message.

'Input Complete' is action undertaken by the user and in background the status should move to Assign SSIs if the request passes the data checks.

No further action can be carried out on a Cancelled Message.

#### *4.1.2.1.2.5. Template Required Information:*

When a New Request is saved as a template then the following additional information is required to control access to the template going forward:

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Field	Character	Comments
User Name or Ref		Along with CCY provides unique id for users
System Unique id		Generated by system
User Group	Defined list	Default to same as User
Comment / Template Group		Available to users to add comments to be able to identify groups / sub-sets of their templates by

#### 4.1.2.1.3. Message Retrieval for Further Action

To allow user to update messages then they will need to recall a message from the database.

To recall a request users will Open the request using either the trade id or via a filtered list. Options for the filter should include:

- All
- All from Template
- All from User Group
- All in CCY
- All in Account
- All in Status
- A combination of Template, User Group, CCY, Internal Business Account, Status
- Value Date
- Amount
- Beneficiary

The expectation is that users will only want to see items not released to GCCM at this point but they should be allowed to select a flag that would allow them to include items already processed.

#### 4.1.2.1.4. Assign SSIs

##### 4.1.2.1.4.1. Auto-completion of SSI data

If a GARM id or a GCCM Internal Business Account number has been added as the beneficiary of the request, the system will recognise this and either retrieve the SSI data for the beneficiary from GARM or note the presence of the GCCM account number (in this case SSI data would be available in the core function part of GCCM D&R and so is not required at this stage).

It has been suggested that D&R should review the account numbers versus GCCM D&R records prior to checking the account number with GARM to complete the SSI data.

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In either case the message will automatically move to the next internal status, which is Pending Approval. (The version tracking information will update as to reflect this automatic update).

*4.1.2.1.4.2. Manual completion of SSI data*

If the beneficiary GARM / Internal Account fields were blank at the input stage then the message will remain in an Assign SSI status until recalled by user and the relevant details completed. The necessary and available fields should be based on SWIFT message fields.

In this status users cannot update a field input at an earlier stage and so they should Reject the message or save into a Provisional Input stage if they need to amend a non SSI field.

*4.1.2.1.4.3. Required Information: -*

The following information will be required (the exact options will be confirmed as part of the next level of system specification):

Field	Character	Comments
Ordering customer		
Payment Type		103, 202, Cover or 210 say
Intermediary	BIC code	If BIC is not used then FW, SC or equivalent should be present
Account With Bank	BIC code / Text	If BIC is not used then FW, SC or equivalent should be present wherever possible
Account Holder	Text	
Account Number	Text	
Charges	3 letters	BEN / SHS / OUR
Additional Info for Swift Message	Text	

Once user has assigned detail or if they wish to amend details they cannot edit, they should then be able to save the message into:

- A Provisional status with only certain checks being carried out,
- Pending Approval status.
- New / Updated Template
- Repair
- Or Cancel Input

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#### 4.1.2.1.5. Approve Message

Users should be able to recall messages as above for approval and while they cannot amend data they should be able to review all details.

Once the authorised user is satisfied, they should then be able to save the message into:

- 1<sup>st</sup> Stage Approved status.
- Repair
- Or Cancel input

##### 4.1.2.1.5.1. Preadvice Notifications

For credits to an account (Preadvice) at this point GCCM will need to review the static data on the quoted account to determine if further level(s) of authorisation is (are) required. If not, then the message should be transmitted / passed to core GCCM process and the status updated to reflect this.

In turn the second approver should be able to recall and review the message. Once they are satisfied they can then save the message into:

- 2<sup>nd</sup> Stage Approved status.
- Repair
- Or Cancel input

Note to promote the use of preadvice notifications in the US to add intraday forecasting and to simplify matching of incoming funds to an Internal Business account, D&R should allow for either:

- the auto-approval of preadvice notifications for a limited range of Internal Business accounts
- or the user who input the notification to also approve the notification

If agreed then this process would be the only allowed exception to the principle of four eyes review of every request (that is at least one inputter and one approver for every request).

##### 4.1.2.1.5.2. Payment Requests

For all payments, the input requested should await at least a further level of approval.

In turn the second approver should be able to recall and review the message. Once they are satisfied they can then save the message into:

- 2<sup>nd</sup> Stage Approved status.
- Repair
- Or Cancel input

At this point GCCM will need to review the static data on the quoted Internal Business account to determine if a further level of authorisation is required. If not, then the message should be transmitted / passed to core GCCM process and the status updated to reflect this. Otherwise the message should await further approval.

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In turn the third approver should be able to recall and review the message. Once they are satisfied they can then save the message into:

- 3rd Stage Approved status.
- Repair
- Or Cancel input

At this point GCCM should be transmitted / passed to core GCCM process and the status updated to reflect this.

#### 4.1.2.1.6. Payments Rejected by GCCM Import process

It is possible, depending on the build of the core D&R module, that requests may be rejected by the GCCM import approval process. The core module will then attempt to return the requests to *the appropriate source*.

For messages input using the web browser this would be the GCCM manual input process. If this occurred then the message should go back to a repair queue where the initial core and SSI data can be amended. Once repaired the message should go into a Pending Approval status. (Each approval stage that the original message went through will need to be repeated though the user approving does not have to be the same at each stage.)

After the approval process has been completed, the amended message will be distributed back to the GCCM Gateway.

#### 4.1.2.1.7. Notes

1. The screen for payment input should be web based and accessible through Lehman Live.
2. Only pre defined users should be able to input / assign / approve / save as template a message. Input / Assign users do not have to be Authorised Signatories but Approvers must be.
  - a. Authorised Signatory lists are tracked through the Treasury Signature database and this approval process should validate against the list in the database daily.
3. Users will be defined against a range of Internal Business and external nostro accounts so if they quote one they have no access to then this should reject
4. Copies of each version should be stored
5. Inputs saved as Templates do not require a value date and can be assigned a name or ref by the user.
  - a. Templates may have SSIs assigned but these cannot then be amended
  - b. Templates can be restricted to certain User Groups
6. Check should occur whether request is back valued or not and this should be flagged to user and they approve second time
7. Assumption is that back valued flows are allowed so we would generate external Swift message and also generate 299 requesting value
8. Check should occur that the Internal Business account and currency are valid combination
  - a. *Open question do we allow cross-currency inputs? If so then we need a process to 'get rate' and process correct accounting*
9. Check should occur that currency and value date are valid combination vs. currency calendar



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- a. If not but an alternative calendar exists for the currency then the users should be allowed to override.
  - b. The check should then be repeated
10. Check should occur that currency and value date are valid combination vs. currency funding deadline. Override should be allowed by flag later for CM additional approval
11. If Beneficiary or Ordering Party Account Number blank input cannot be saved for current or future value dates to release status. Must go to a pending SSI assignment status.
12. A message cannot stay in an unapproved status indefinitely, so an automated clean process should start after 2 or 3 days (make flexible) which puts message into a Cancel status.
13. Certain fields will require search facilities to allow user to find the correct record. These include Account Number, CCY, CCY Calendar and BIC code.
14. Message should appear with unique reference from 'manual input' database as separate unprocessed / un-accepted activity on internet statement of Internal Business account but not be sent to GSSR / paper statement until accounted for
15. It is not expected that more than three levels of authorisation of a message will be required, but should we allow for this?
16. Messages should be passed by TIBCO to GCCM core module
17. The input module should allow projection figures with the appropriate flag set to be passed to GCCM. To get around system restrictions could we consider using code word Projection in Beneficiary account field

#### 4.1.2.1.8. Bulk File Upload

As noted before it is expected that the web input process will allow both direct input and batch upload from say an Excel or CSV file to allow groups with large number of transaction requests but no automated feed to input multiple requests simultaneously.

For users to be able to load a file of completed payment instructions including SSI data into D&R, a load function should be available on the new payment screen. The function should allow users to browse their network connections to find the file of payment and receipt requests.

To prevent users accidentally loading the same set of payments twice, the file of requests should include at least a unique reference for a series of requests (a series of request could be the entire file of messages) or preferable a unique reference per request. This unique reference field should be stored along with each payment request created. The file should then be retrieved by GCCM D&R and should then attempt to create a series of new requests based on the data supplied. As a first step in this process the unique reference field should be compared with the reference already stored. Any requests containing a reference that has already been used should be flagged back to the user and should not create a request.

All messages should go into the same state as if they had been input manually into the web input function.

##### 4.1.2.1.8.1. Bulk Approvals

Should D&R allow users to highlight a number of requests and approve these simultaneously or should each request be approved individually?

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#### **4.1.3. Other Messages Processed by Gateway: Incoming Requests Other and Outgoing Messages:**

The following types of records will need to either be pulled in or sent to GCCM to allow it to calculate and accurately reflect the balances and entries through real world nostro accounts

##### **4.1.3.1. Daily Balance Report from GSSR or MT950s – Ref 1.5.2.1**

Each day to be able to track the actual start of day balance on an external nostro account and to use this to calculate the expected / projected end of day balance from this number, GCCM will need to source the balance data on each nostro account.

This could be done either from the individual original statements sent into the Firm (via SWIFT) from the various Agent Banks or it could be by allowing GSSR to first process the statements and then extract the balances from GSSR.

Note currently GSSR does not segregate or flag real world accounts differently to internal only reconciliations. Therefore as part of the processing the balance file will need to be filtered and only the real world balances extracted.

This is currently done manually by keeping a separate record of all GSSR accounts and identifying them as internal or external with CCM. This has the slight advantage that every time a new reconciliation is set-up in GSSR it is flagged to CCM straight away but is significantly time consuming.

##### **4.1.3.2. MT900, 910 or equivalents from payment channels – Ref 1.3.3.1**

To be able to track the settlement of payments and receipts across the Firm's various nostro accounts intraday and allow time to follow up on fails, GCCM needs to be able to:

- track and match incoming confirmations of activity from the banks by nostro account
- then update the status of the individual records in GCCM

While a variety of confirmation processes exist including phone and bank website, GCCM should be able to cope with at least the Swift standard MT900 and MT910s and in the future the Chase / Citibank proprietary feeds or the Cable and Wireless XML feed. The Gateway will need to take the incoming data and convert into a format that can be read by the GCCM Matching process to match the confirmation with the underlying item.

##### **4.1.3.3. Reconciliation Postings – Ref 1.1.3.1**

After the Firm's has reconciled its nostro accounts a number of postings (to clear unpre advised, fees etc) are always identified for posting after value date. Once GCCM is live these postings will need to be sent from GSSR into GCCM to true up the book closing positions with the real-world balances for the nostro accounts.

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These entries could either be automatically feed from GSSR or (more likely?) via an Excel file. If via an Excel file then items should go through web-page file upload process.

#### **4.1.3.4. Query and Response Traffic**

To minimise the workload that will be imposed on the GCCM database at any one time, no direct access should be allowed to the database. Instead all incoming data requests that would involve a call of the database should be 'filtered' by the Gateway to ensure:

- Queries are structured in the most efficient manner for the database
- To prevent large data calls slowing performance
- To hold queries back so that payment processing usage takes priority at key points of the day or if processing has been slowed below an agreed performance level.

#### **4.1.3.5. Outgoing Traffic**

The Gateway will be responsible for managing the connectivity between GCCM and the Firms other systems and will need to be able to process the following (a number of these steps are dealt with more thoroughly later in the BRD):

##### **4.1.3.5.1. Acknowledgements to Source Systems**

For each message request that comes into GCCM D&R an acknowledge needs to be sent back to the originating system confirming receipt and all status changes through the lifecycle of the instruction. The exact formats of the acknowledgements will be specified as part of the next stage of the system specification process.

##### **4.1.3.5.2. Repair messages**

For systems that can take in and handle items that require repair, the Gateway should convert the instruction from the GCCM format into the appropriate format for the system that original generated the request.

Also where items are to be pushed back out to an individual for repair, GCCM should request an email is sent notifying the individual of the fault via the Gateway. If possible the Gateway generated email should either link back to the underlying item or to the repair screen.

##### **4.1.3.5.3. GARM – Ref 1.1.2.2**

GCCM D&R will communicate with GARM to source Standard Settlement Instruction (SSI) data for requests that have been sent with a client GARM id rather than complete SSI data.

Longer term it is possible the GCCM D&R will be updated to validate all SSI data sent to it against the records held for a client in GARM.

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4.1.3.5.4. Payment channel messages

Once an item has been released from the Intra-day Release queues, GCCM should pass it to the Gateway for onward processing. The Gateway should strip out any extraneous information that is part of the GCCM but is not required for the payment channel.

The Gateway should then authentic (and encrypt) the individual message or file and pass to the indicated payment channel via the most appropriate methodology.

4.1.3.5.5. Statements to GSSR – Ref 1.5.3.1

Each account within GCCM should be set-up so that a copy of the entries across it can be passed to GSSR for reconciliation. As much information retained about an individual record on an account in GCCM should be sent to GSSR.

GSSR would then be responsible for taking in as much as it can handle.

GCCM should also be to create formal Swift MT950 messages.

4.1.3.5.6. Accounting entries to DBS – Ref 1.5

As part of GCCM purpose is to host the in-house bank, it will be a sub-ledger and as such will need to deliver accounting entries to DBS on a daily basis. The Gateway will be responsible for taking the accounting journals created by the in-house module and delivering them to DBS in the most effective manner.

It is hoped that this can be done intraday by leveraging the sub-ledger work being undertaken by Finance. Further details on accounting are available in chapters 7 to 9.

4.1.3.5.7. Interest accounting entries to GID / Debt Database – Ref 1.5.3.7

In a similar way to DBS, as part of GCCM purpose is to host the in-house bank, it will be a Treasury sub-ledger and as such will need to deliver accounting entries, such as those related to intercompany interest P&L, to the GID (Debt Database) on a daily basis.

The Gateway will be responsible for taking the accounting journals created by the in-house module and delivering them to the GID in the most effective manner.

4.1.3.5.8. Automated reports

GCCM is likely to have some automated reporting functionality based around queries to the reporting database with certain reports generated by GCCM emailed out to users.

GCCM should send an email notifying the agreed distribution of the report via the Gateway. If possible the Gateway generated email should either link back to the underlying report or to the Lehman Live deployed version.

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#### 4.1.4. Process Name: GCCM Import – Ref 1.1.2.1

To write data sent from the Gateway to the GCCM core database.

##### 4.1.4.1. Basic Process Flow of Import Function

Once a message is in a GCCM Import queue as a result of being accepted by the Gateway, the message should be read by the GCCM Import function.

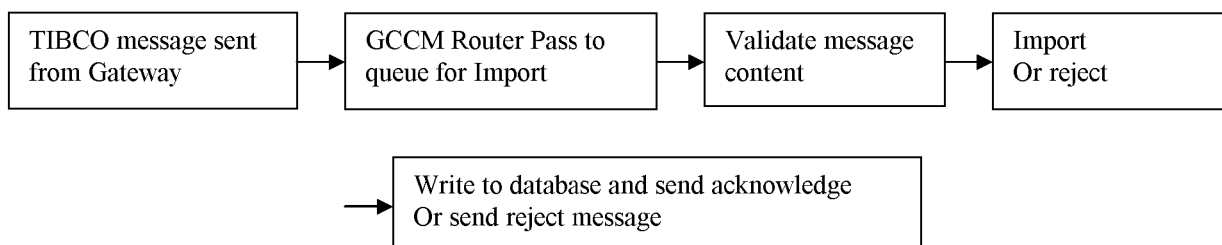
The import function should have active management of the queues; processing items that come into an urgent queue for an open currency window first whereas items that are flagged as internal only traffic by the source systems can be held back to be processed during quiet times. Multiple queues should work in parallel.

The following is a suggested processing prioritisation:

1. Urgent
2. Items of currency with next funding deadline
3. Items with value date today
4. Items with forward value
5. Internal items

As part of the Import function GCCM should initially validate a message to ensure that sufficient information has been sent by the source system to generate a database record. If a message fails this process, then GCCM should send a rejection notice back to the source system.

If the message passes GCCM should create a message in its database in a Pending Processing status and create a unique ref for the message. The unique ref should be passed back to the source system



##### 4.1.4.1.1. Required Information to generate a GCCM database record:

Field	Character	Comments
System id		
System unique ref		
Time sent from System		
CCY		
Amount		
Value Date		

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Business Account payee/ Receiver		
Debit / Credit indicator		
Beneficiary account		Could be GARM id, GCCM Account number or 3 <sup>rd</sup> party account id.
GCCM unique id		
GCCM status & version		

4.1.4.1.2. Optional Information to include in a GCCM database record:

Field	Character	Comments
Mandatory Swift fields		Including Travel Rule info
Optional Swift fields		
Other additional Info		
GARM id		
Message type		
Message priority		
Legal entity		
User who released		
Internal only movement flag		
GCCM user amendment		
GCCM checks status		
Posting Date		Date item is shown in cash-flow
Effective Date		Date sent to system
Provisional Figure Indicator		

4.1.4.1.3. Message Warehousing

The system should allow messages to be received nine working days forward of the value date required; that is if today is 1<sup>st</sup> October the system should accept requests for forward value up to the 14<sup>th</sup> October.

These requests should then be warehoused on behalf of the originating system until nearer the value date at which point they should be generated into a pending release status for manual or automatic release, as appropriate for the external cash nostro, to the chosen cash settlement process.

External messages should be generated a set number of days in prior to value and not before; for example for a payment received on 1<sup>st</sup> value 14<sup>th</sup> for USD the external message does not need to be created on first but say on 13<sup>th</sup>. The period forward of value that messages should be generated should be set as part of the currency / external nostro account static.

The system should discount weekends and global holidays from its forward / back value date count but if at least one currency is available on a day then that day should be counted as a working day for the system and so contribute to the days maintained on the system. For example 25 December is a valid value date for JPY (assuming it does not fall on weekend) and so the system should be open.

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4.1.4.1.4. Notes

- TIBCO, MERVA / MINT and SWIFT all allow process flags to be set. GCCM will need to accept and potentially prioritise traffic based on these flags.
- GCCM Gateway queues will be system specific but GCCM Import queues should not.
- It should be easy to add further Import queues and there should a load bearing function that takes allowance of incoming priority and waiting times ( $1/\lambda$ ).
- A rejection could, for example, occur if the debit Internal Business account number quoted does not exist in GCCM.
- GCCM should allow source systems to send amendments or even cancellations down to GCCM by quoting the GCCM / their unique reference for a request. Need to be specific on controls to prevent duplicate records being created and point at which a change becomes irrevocable.
- ALM would like to include the possibility of source systems sending Provisional or Forecast numbers through to GCCM to be used within the forecast process. To handle this it is proposed that a Provisional Figure flag can be sent as part of the message from a source system. If this is set to yes then the GCCM record should be created but saved into a Provisional Figure status. These numbers would then appear in the appropriate currency balance in a Provisional Column but would not be passed through the STP, Settlement or Accounting Engines of GCCM.

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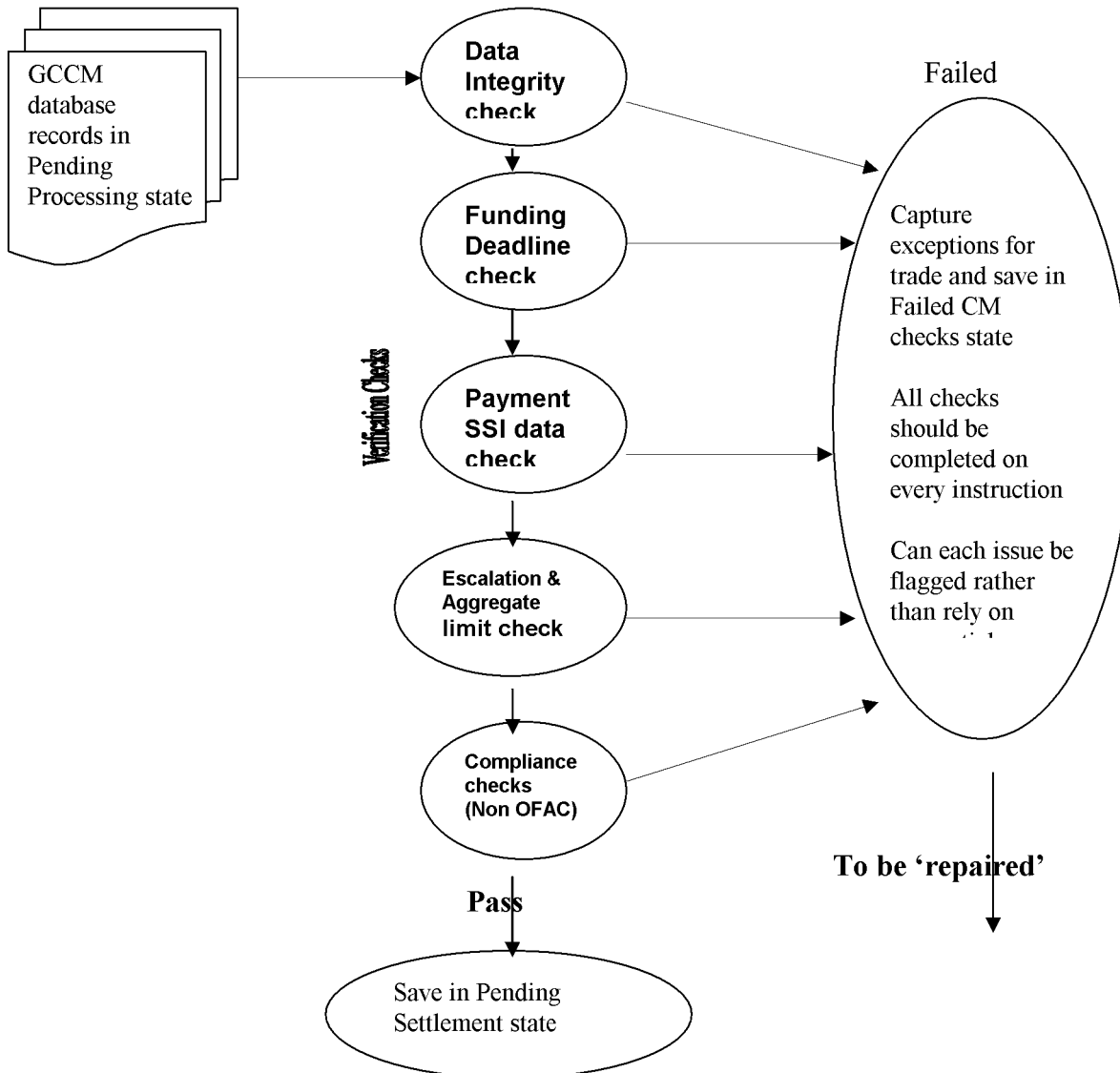
#### 4.2. D&R: Detail of Message Content Validation (STP Engine) – Ref 1.2

To review the content of the information supplied by initiating systems to ensure that message can be funded and settled STP before creating accounting and any external message traffic.

##### 4.2.1. Basic Process Flow for STP Engine – Ref 1.2.1

Once written the GCCM core database in a Pending Processing state, the message should be passed through a series of checks before being authorised and passed to the next stage Pending Settlement. The initiation of this validation should be automatic and run continuously with multiple messages being checked in parallel. Items that fail one or multiple steps will need to be ‘repaired’ and notification of this will need to be passed to the source system

This is a high-level overview of the proposed flow (based on the London AVE model).





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Each of the checks above will be laid out in their basic form in the following subsections; however the system should be able to deal with the adding of rules to the individual validation processes, the addition of further validation processes or the re-engineering of a validation process in an easy to implement way.

If possible a graphical user interface should be created to allow creation / amendment of individual rules. (It is expected that the re-engineering of a particular validation process would involve technology support.)

All the checks should be undertaken on each request altogether; that is each request should be validated against each check in the process once the request is selected by the STP Engine and the results of all the checks should be presented together. Requests that pass every check should move to the next stage of the payment process. Items that fail one or multiple checks should in general go to a repair queue and further processing halt. Failed items should still be reporting in the currency position numbers to ensure the Firm is correctly funded.

Note failure of a check does not automatically mean a message will be rejected just that it needs further analysis or processing. In general items that fail one or multiple steps should be saved into a Failed STP validation state. Specific fails such as Beneficiary is an Internal Business account will bypass certain GCCM stages and will be saved into the appropriate GCCM state.

How repairs are to be handled will be dealt with elsewhere, though it should be noted that once a repair is completed on a particular record, if that record is saved into a Pending Processing state then it will need to go through the checks again.

The payment channel that would be used to settle a transaction will be determined after this point and so the payment quality checks detailed here will cover the minimum requirements using Swift standards as a reference. As and when GCCM connects to other payment channels additional standards may need to be incorporated or rules amended to cope.

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#### **4.2.1.1. Process flow after the STP Engine**

Once an item has passed through the STP Engine (passed or failed), requests should be split between internal and external movements. Internal movements should be sent to the Accounting Engine for immediate processing while external requests should start to appear in the Currency Position report.

Initially external requests should appear in the unassigned nostro column however the system should automatically begin the process of assigning the request to an external account for settlement. How the system should choose the external account to be used is outlined in section 4.3, as is a description of the process of choosing between payment channels, should more than one opportunity exist, for the settlement of the request.

Once an item has been allocated to an external account, the request should appear in a Pending Settlement status if the request passed the STP Engine or a Pending Repair / Pending Approval column if the request failed one or a number of the checks.

Note if the Pending Repair / Pending Approval items are split into two columns then any request that has failed multiple checks such that the messages requires repair by the originator and approval by Cash Management should appear in the Pending Approval column only. (Once the approval(s) have been completed then the item could theoretically be moved into the pending repair column if the repairs were still required – CM could repair simple items without reference back to Ops. This process should happen automatically as a result of the request being resubmitted to the STP engine once it has been repaired.)

Messages that have been entered that are intra Lehman flows that must be settled via cash movements, for example nostro account funding movements, to be denoted by the coding FUND, will need to be processed in a manner that would minimise the physical cash settlements and also reduces the potential for intercompany exposures to be created. This will occur through the netting of payments between Internal Business accounts and the routing of net movements via the entity linked to the Business or Originating account that is responsible for the overall funding of the entity the originating accounts resides in. It is possible that to further reduce activity the STP engine should populate the SSI data based on Funding Entity linked to the originating account overriding any direct payments.

Finally to allow for further currencies becoming Euro In currencies in the future, GCCM D&R should auto convert payments or receipts in an in-currency once they have passed through the STP engine to their Euro equivalent. The system should input the payment into the Euro nostro account for processing and funding rather than an in-currency nostro (though it should be able to show the original in-currency transactions broken out if required) and send the instruction out noting the original currency amount.

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#### 4.2.2. Process Name: Data Integrity Check – Ref 1.2.1.1

To ensure that the basic information that has been sent to GCCM by a source system as part of a payment request or receipt notification is meaningful and can be used to settle the request. The data contained within the GCCM database should be passed through the following checks to ensure that it can be processed within the system.

Field (s)	Check	Response to NO
Beneficiary	Is this not a GARM Id present?!! If no then is SSI data supplied	If both no call complete SSI data from GARM. Additional details should then go through other checks.
Amount	Is less than 1	Flag as failed and note
CCY calendar	Is present and valid for CCY	Append default calendar code to record if one is already present or invalid
Value date	Is the date a valid business day for selected calendar	Flag as failed and note
Value date	Is it current or forward value date	Flag as back-valued entry but pass at this stage to be process differently later
CCY	Is CCY valid for quoted business account	Flag as failed – will either require changing or special FX processing
Internal Movement	Is this not an Internal Request	Step over to Compliance checks Auto-pass and route messages to accounting processes bypassing section 1.3
Originating Account	Is this marked as Seg. or SPV	Flag for careful processing later
Beneficiary	Is this not a Lehman Internal Business Account quoted	Flag as internal only movement (update a separate field) and step over to Compliance checks
Beneficiary	Is this not a Lehman External Nostro Account quoted	Flag as intra Lehman movement (update a separate field)– In particular need to be aware if this an internal payment that can be settled via in-house bank versus nostro account funding which must be moved
Beneficiary	Is this not the same as Ordering Account	If intra Lehman movement then flag as funding and pass. Otherwise fail and note

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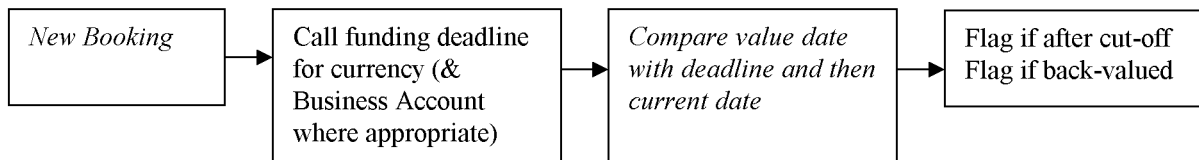
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#### 4.2.3. Process Name: Funding Deadline Check – Ref 1.2.1.2

To ensure all funding requests (outgoing real world debit or credit requests) requests can be funded and processed with value.

To check that for the currency of the requested movement the Firm can still economically funds the transfer. Any requests that are received by Cash Management after the funding cut-off are processed on a best effort's basis for the value of the funding request or paid on the next available value date.

Back-valued funding requests will require additional approval and processing.



GCCM should flag any funding requests that are received after a cut-off or if the request indicates a back-valued movement. As with the authorisation of Escalations, Cash Management only will have to either accept the funding request or change the value date of the request after referring to the originator of the request.

For back-valued requests, the value date of the request will be changed to the most appropriate value date to fund the transaction. The originator of the request should then receive notification of the change and a request to approve (via an email containing a web-link?) any costs for the back-valuation to the quoted value date. Once the back-valuation approval has been received GCCM should create a request to the appropriate agent bank that will handle the movement to back value the transaction.

##### 4.2.3.1. Funding Deadlines Table

It will be necessary to maintain a default matrix within GCCM (that is to be updated by CCM) which will list the currencies and the time funding cut-off in the form of a time (in Greenwich Mean Time, GMT) and day count.

For example:

TWD, S-2, 10:00

Where TWD refers to Taiwanese Dollars, S-2 is value date minus two working days, and 10:00 is 10:00 am GMT. Note the cut-off should be converted to the local time for the Cash Management users.

Also due to specific business requirements certain Business Accounts will be allowed to override the default cut-off and so the table will need to store the Business Account and its specific cut-off (in a similar way).

All funding requests input into GCCM should be assessed against this rule set/matrix and any fails reported to the verifier of the message.

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Note

- 1) Funding Requests generated by Cash and Collateral Management user groups should be exempt from the deadline checking process.
- 2) GCCM will be set-up to recover the costs of funding an item by going overdrawn or incurring late same day funding costs by imposing a one-off fee for each late request on the originating Internal Business account.

4.2.3.1.1. Extension to Funding Deadline table

Further to the simple table noted above, it has been discussed adding into the table the possibility of checking deadlines for specific payment channels in addition to the overall funding of a currency.

This additional checking would be used to determine of whether a particular request could be sent via the payment channel suggested by the formatting of the message / size of the request or whether CCM users should redirect failed items.

For example:

USD, S, 21:00, ACH

USD, S, 22:00, FED

Where USD refers to US Dollars, S is value date today, times shown are GMT and:

- ACH refers to Automated Clearing House
- FED refers to FED Wire

**4.2.3.2. Authorisation**

Unlike other repairs which will be handled primarily by non-CM users it is expected that funding deadline exceptions will only be handled with Cash Management. However handled the Verify process should record the verifying user's UserId, so that even if someone else subsequently amends the trade, it is possible to see who verified the escalation.

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#### 4.2.4. Process Name: Payment Quality Checking - Ref 1.2.1.3

To set up a table of rules against which all payment and receipt instructions would be validated against and either rejected or accepted.

**Note: This document use Swift standards as its reference. As and when GCCM connects to other payment channels additional standards may need to be incorporated.** The following is heavily based on the payment quality work undertaken in London Cash Management.

SWIFT message formats are generic globally and any breaches of compliance with the SWIFT message standards will be either rejected by MERVA, the firm's SWIFT interface, or rejected by SWIFT through a negative acknowledgement (NAK). However, SWIFT standards can allow free format text in fields within the message, the use of incorrect account number or clearing code structures<sup>1</sup>, the omitance of optional fields that may be required in some cases, etc. The fact that messages can be structured with non-generic data means that correspondent bank's systems may not be able to process the payment automatically. Over time the rule set will be expanded to address the nuances in different countries, clearing systems and in some cases banks.

Payment channel and correspondent bank specific formatting will be taken care of at the point the outgoing message from GCCM is created. This will be covered in later in the document.

To speed up the development and implementation process the message and currency rule sets will not be exhaustive as to cover every conceivable issue that may cause a message to fall into repair. Therefore, the table that contains the rule sets should be able to readily accept additional criteria.

Figure 1 shows the fields that need to be checked for payment quality. Note at this stage it is not intended to develop significant quality analysis on MT210 messages.

Figure 1

Fields	Definition	MT103	MT202
50:	Ordering Customer		n/a
52:	Ordering Institution		n/a
53:	Senders Correspondent		
54:	Receivers Correspondent		
56:	Intermediary Bank		
57:	Account with Bank (Beneficiary's bank)		
58:	Beneficiary	n/a	
59:	Beneficiary		n/a
70:	Information for Beneficiary		n/a
72:	Additional payment details		

<sup>1</sup> All SWIFT bank identifier codes (BICs) are validated by MERVA before transmission to SWIFT.

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The field numbers 50 through to 59 detailed in Figure 1 should be represented in GCCM via a BIC field and a free text field equivalent to A or D formatting. For record keeping GCCM should be able to have generic field names to prevent duplication at this point, as this specific formatting may not apply for each payment channel available to GCCM; for example GCCM will not need to store fields 58 & 59 separately.

Note to cover all eventualities fields 70 & 72 should be stored separately.

#### **4.2.4.1. Rule Set**

The following are the main rules, from a SWIFT perspective, that need to be applied to ensure a minimum level of payment quality to enable our correspondents to process most payments cleanly without repair.

##### **4.2.4.1.1. Rule 1**

If message type is not defined, then check beneficiary field. If this contains a BIC then set message type as MT202 otherwise set message type as MT103.

##### **4.2.4.1.2. Rule 2**

Ensure that no characters that are restricted in SWIFT have been placed in message anywhere; for example "&"

In fact consider auto-replacement of common failures with equivalent characters; so for example "&" replace with "+"

##### **4.2.4.1.3. Rule 3**

Any field in the 50 range used in the MT202 should have an 8 or 11 character BIC in the field.

##### **4.2.4.1.3.1. Exceptions to Rule 3**

For STP purposes a BIC is not always required in fields 56 or 57 provided a clearing code for the institution is quoted. If a clearing code is used i.e. a CHAPS sort code or Fed Wire / ABA reference, the code should be in the text field in GCCM.<sup>2</sup>

##### **4.2.4.1.4. Rule 4**

If the ultimate beneficiary is a financial institution with a BIC code the message type should always be a MT202. A BIC address should never be quoted in field 59 of a MT103, if it is the message should be a MT202

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<sup>2</sup> A list of the codes and number of digits used in clearing codes can be found in the SWIFT user guides.

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4.2.4.1.5. Rule 5

Field 72 should not be used unless absolutely necessary unless using the acceptable code words detailed in the SWIFT user directory, i.e. /TELEBEN/3.

Therefore, reject messages with field 72 information unless a code word is used.

4.2.4.1.6. Rule 6

In an MT103 if field 56 and 57 are used Rule 1 and its exceptions should be applied.

4.2.4.1.7. Rule 7

The absence of data in any mandatory field, 58 and 59 in a MT202 or 103 respectively<sup>4</sup>

4.2.4.1.8. Rule 8

Field 52 of a MT103 should always be a Lehman specific BIC.

4.2.4.1.9. Rule 9

All BICs should be valid published BICs in the current SWIFT directory as published on a quarterly basis.

4.2.4.1.10. Rule 10

For notifications of incoming funds, MT210s, the Internal Business and external nostro account to be credited and ordering customer / institution fields should be present.

#### 4.2.4.2. Applying these Rules

Given the number of rules Figure 2 is a simple decision tree on how to apply rules.

**Check 1 - Field sent to check is:**

- Not blank
- Is BIC code present
- If BIC code present, then test against valid BIC codes
- If BIC code is not present, then check for presence of valid clearing code test e.g. SC for sort code

**Check 2 - Field sent to check is:**

- Is non-blank
- Is not SWIFT Code

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<sup>3</sup> A list of code words and their usage can be found in the SWIFT user guides.

<sup>4</sup> This would be picked up by MERVA if input directly but if SSIs are not assigned then will GCCM make a payment?

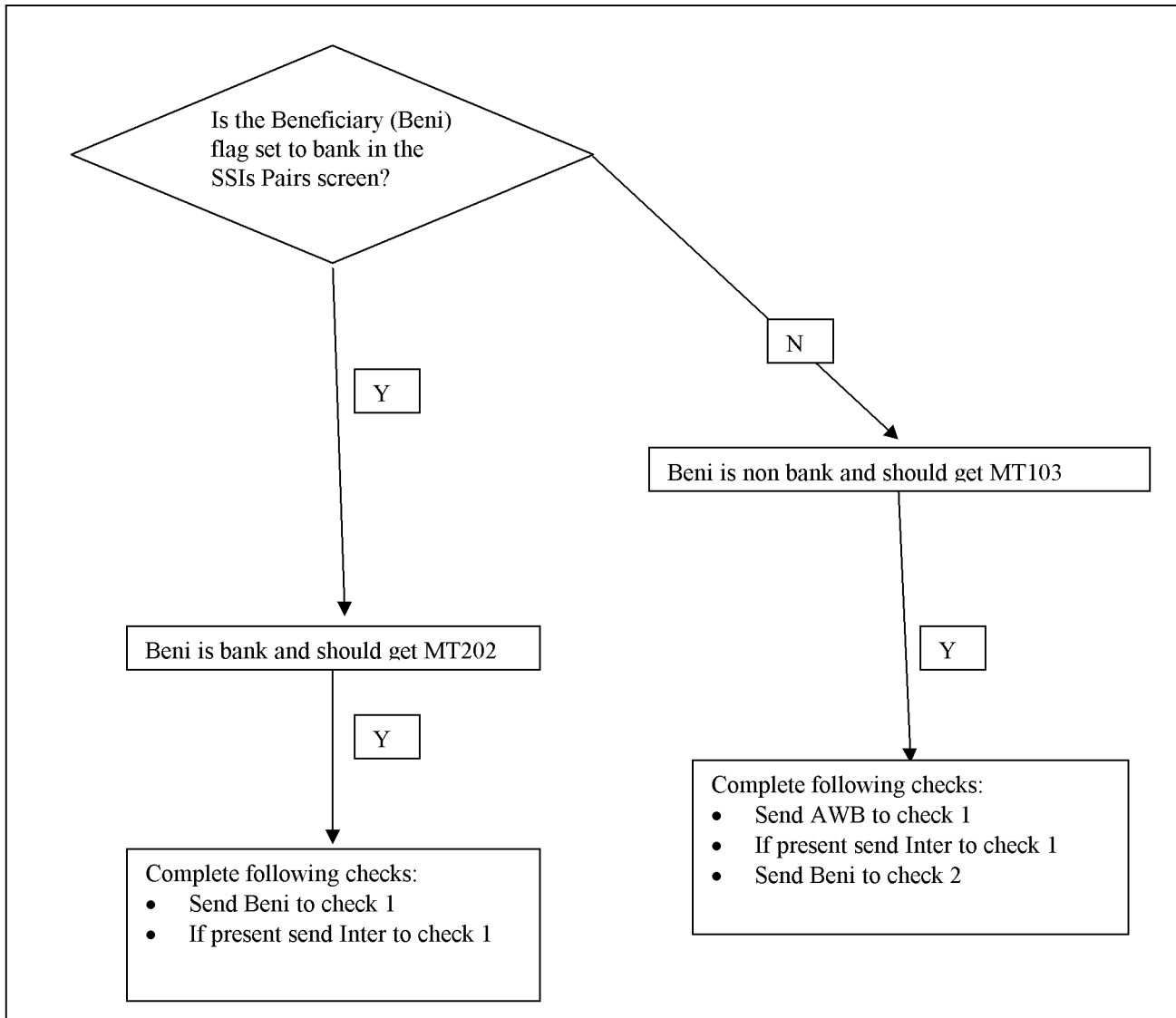


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If a message is rejected due to a payment quality failure the original instructions should be retained with just the problem area(s) highlighted.

Figure 2



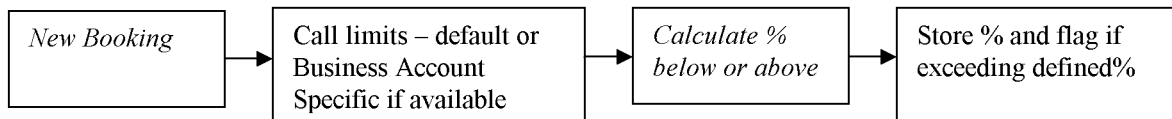
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#### 4.2.5. Process Name: Transactional Escalation Checking – Ref 1.2.1.4

To compare the current request against historical trends recorded for a Business and / or a specific Business Account and identify unusually large amounts.

Ensure all funding requests for each business are within that business's funding limits. Any request that exceed these limits should be escalated to different management hierarchies dependent on the percentage size of the limit exceeded.



Once passed through the data integrity checks payment request (outgoing real world debit requests) should be compared against the default limit for the Business Account quoted on the request. Internal movements and receipts should pass through check so percentage is recorded but should not fail validation.

Any payment requests that exceed the defined level will fail this control. At this point the payment and associated postings should be suspended until the appropriate authorisation from the CCM management team has been granted. The system should allow on-line authorisation by the CCM manager or by a CM user on behalf of a manager.

##### 4.2.5.1. Escalation Table:

As each Business Account is set-up its escalation level should default to a level of USD 50,000 equivalent. Users should then be able to update the level for the Business Account as part of the account set-up.

If Business Accounts are considered multi currency then it will not be practicable to set up each Business Account with an escalation level for all the currencies that it can be used for. So to compensate a default level of USD 50,000 equivalent should be used unless a Business Account has an escalation level for the currency of the request. It should be sufficient to calculate the currency equivalent of the default level simple using the prior working days FX rates.

For simplicity it should be possible to set escalation amounts at the business level and have these escalation limits flow down to all Business accounts owned by that business line.

In addition certain currencies may be blanket forced to an amount level of zero to act as a control for restricted or no longer active currencies. In these cases the limit cannot be overwritten for an individual Business Account and all activity must be approved.

Though the default level will exist, it is assumed that each Business / Business Account will require a level, some of which will be set manually while the majority will be defined through an overnight calculation process.

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Business Account escalation levels that have been set manually should not be automatically overwritten by the overnight calculation process. In addition there will need to be a user interface will be required to input and maintain the table of escalation criteria by Business Account / Currency.

#### **4.2.5.2. Overnight Calculation**

To set the escalation limits GCCM should undertake the following calculation on a daily basis:

- Retrieve 6 months of payment request (outgoing real world debit requests); minimum of one month's data required
- Calculate mean and standard deviation of the requests by Business and then by individual Business Account
- The limit will then be a formula driven calculation:
  - Initially it is likely to be mean and 2 standard deviations (95% confidence interval) for the overriding Business
  - Though it the longer run the formula should look to identify outlier events on a more detailed basis and potentially exclude these items from the calculation process.

GCCM should use the results of the calculation to overwrite the limits used the previous working day. It should also record and report where there has been a significant value change in the limits between the two working days as this may reflect a one-off transaction that does not reflect the activity through the Business Account and should be exclude from the calculation process. GCCM should then allow the appropriately authorised user to flag a historical movement so that it is excluded from the Escalation calculation process and rerun the calculation process for that particular Business Account.

#### **4.2.5.3. Authorisation**

Unlike other repairs which will be handled primarily by non-CM users it is expected that escalation approvals will only by handled with Cash Management. However handled the Verify process should record the verifying user's UserId, so that even if someone else subsequently amends the trade, it is possible to see who verified the escalation.

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#### 4.2.6. Process Name: Aggregate Business Limits – Ref 1.2.1.5

To monitor the total requirement used by a business line both gross and net during any selected period but mainly intra-day. Similar to the individual payment limit controlled by the Escalation check, the following process looks to track and identify businesses that are creating a large intraday (and possibly extended) liquidity drain.

During the day GCCM should track the total value of incoming and outgoing activity for a business line and then compare each new request from that business line versus the prior total. Once the net total exceeds the historical aggregate limit for a business, outgoing traffic should be held up either until incoming funds reduce the net number below the limit or CM approve an additional outgoing traffic.

At any one point in time GCCM should list the Business Lines that have traffic currently held up due to exceeding their predetermined limit in a queue accessible from main screens. If incoming funds or a preadvice notification arrives from the Business line while activity is pending, then the Business line should be automatically released and activity continue to be processed until the limit is again exceeded. Cash Management should also be able to enter the queue and authorise the release of traffic for the Business line either by allowing the CM user to update the current limit for the Business from the queue or by allowing the CM user to view the pending traffic and releasing the individual items from the queue. If the latter GCCM should confirm the effect releasing the items would have on the Business position.

For each Business aggregate levels should be automatically set by an overnight calculation process. In addition there will need to be a user interface will be required to input and maintain the table of aggregate escalation criteria by Business Account / Currency.

Note that for this section both the process and calculation suggested are a very simple way of achieving better control of the flow of activity for a particular business and it is likely that over time this checking process will need further revision and enhancements.

##### 4.2.6.1. Overnight Calculation

The following calculation is one option to set the aggregate escalation limits on GCCM.

*D&R should undertake the following calculation on a daily basis:*

- *Retrieve 6 months of requests (outgoing real world debit requests and incoming receipts); one month's minimum data required*
- *Calculate the average and standard deviation of the total net funding by Business Line from the individual Business Accounts owned by the Business*
- *The limit will then be a formula driven calculation:*
  - *Initially it is likely to be mean and 2 standard deviations (95% confidence interval) for the Business*

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GCCM should use the results of the calculation to overwrite the limits used the previous working day. It should also record and report where there has been a significant value change in the limits between the two working days as this may reflect a one-off transaction that does not reflect the activity through the Business Account and should be excluded from the calculation process. GCCM should then allow the appropriately authorised user to flag a historical movement so that it is excluded from the calculation process and rerun the calculation process for that particular Business.

#### **4.2.6.2. Authorisation**

Unlike other repairs which will be handled primarily by non-CM users it is expected that aggregate limit approvals will only be handled with Cash Management. However handled the Verify process should record the verifying user's UserId, so that even if someone else subsequently amends the trade, it is possible to see who verified the escalation.

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#### **4.2.7. Process Name: Compliance Checking – Ref 1.2.1.6**

To identify and report on items that are potentially out of policy payments that could in turn constitute a ‘duty of care’ failure somewhere with the Firm. There are two levels of checking one which will occur at the individual request level real time and one which will review all activity through the system and may not occur real-time.

These checks are not designed to be full-proof and do not look at the individual client accounts but at the Internal Business account level which will represent a business line not a client. Also the checks are likely to identify a number of false-positives, at least to begin with. Certain of these checks may be conducted elsewhere in the bank as well within GCCM D&R.

Messages sent into GCCM will be passed through the following checks to identify items for further study. Items that are identified may or may not be held back by the checks as certain checks may identify too many false positives initially for real time investigation. Therefore the system will need to be able to switch between just reporting items to also holding them back as the number of false positives is reduced.

GCCM should allow checks to be improved and further checks to be included after agreement between Compliance and CCM and suitable testing.

#### **Notes**

1. If an instruction is stopped CM will liaise with the appropriate CAD and / or Operations group for guidance.
2. If an instruction is not stopped CM should investigate the item next day.

Each night GCCM should create a report of all flagged items with the reason why for distribution to Compliance.

#### **4.2.7.1. Suggested Checks**

This list is not considered exhaustive – awaiting feedback from Kim Keating and Sherri Dewey specifically.

Update checks / maintaining rules is this user maintained, daily update from external list and user override.

##### **4.2.7.1.1. Checks on individual requests**

1. Payment or Receipt SSIs include a restricted country
2. Currency is restricted
3. Payment or Receipt SSIs make reference to certain institution types including casinos or money exchange bureaus
4. Travel Rule details are not completed
5. On incoming money for the quoted client account the ordering instructions are not the same as those held on file in GARM

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6. SSIs quoted in message are not the same as the ones in GARM for the quoted GARM id. It is expected that this check in particular is likely to create a large number of false positives as the Firm allows third party payments under certain circumstances, such as Letter of Authorisation in place or Authorised Third Party Repetitive Payments, so GARM / GCCM may need to be able to flag that this approval is in place.
7. Final beneficiary detail line only quotes an account number not a name

#### 4.2.7.1.2. Checks on multiple requests

More complex checks reviewing activity data for patterns:

1. Large volumes of small payments to same beneficiary account from different internal business accounts
2. Unusual activity based on historical pattern for an internal business account (multiple payments and receipts same day on a low volume business account)
3. Time series and value mix analysis

#### 4.2.7.2. Authorisation

The following steps outline how items that have failed the Compliance validation process should be authorised.

As per any fail not managed by CCM, the requests should be sent out to the relevant group for authorisation. However in this case the items should be treated as requiring Manual repair (See alter for more detail on process).

Items that fail should be reported to Compliance via an automated email. The email should then allow the receiver to bring up the system and go straight to the detail of the message and thence authorise it.

In addition Compliance should be able to email their authorisation to Cash Management who in turn can authorise the request in D&R on Compliance's behalf.

#### 4.2.7.2.1. False Positives

To reduce the continually validation of repetitive items that are found to be false positives (a request that fails a check but in fact is not an issue) D&R should allow users to flag a request in such a way that any subsequent matching requests would automatically pass the Compliance checks.

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#### **4.2.8. Euro In Currencies**

It is expected that the countries that formally joined the EU in May 2004 will adopt the Euro after a period of currency stability. Therefore it is prudent from the start to build into GCCM D&R the ability to merge currencies into the Euro.

In fact where possible the functionality required to merge currencies into a new or existing currency should be made as flexible as possible to allow for the creation of new pan regional currencies.

Currencies should be added to a table that defines them as a merged currency, the rate at which they should be converted and the currency into which they should be merged. For example XEU was merged into EUR at a rate of 1 for 1. The conversion rate should be user definable or up-loadable from an existing feed of FX rates into GCCM D&R.

Requests that come into the GCCM D&R in a currency that has become an in-currency should be converted into the correct amount for the overriding currency (Euros) using the rate provided before the booking is assigned to a nostro. The original currency amount should be retained for future use including the creation of the outgoing payment request or preadvice notification.



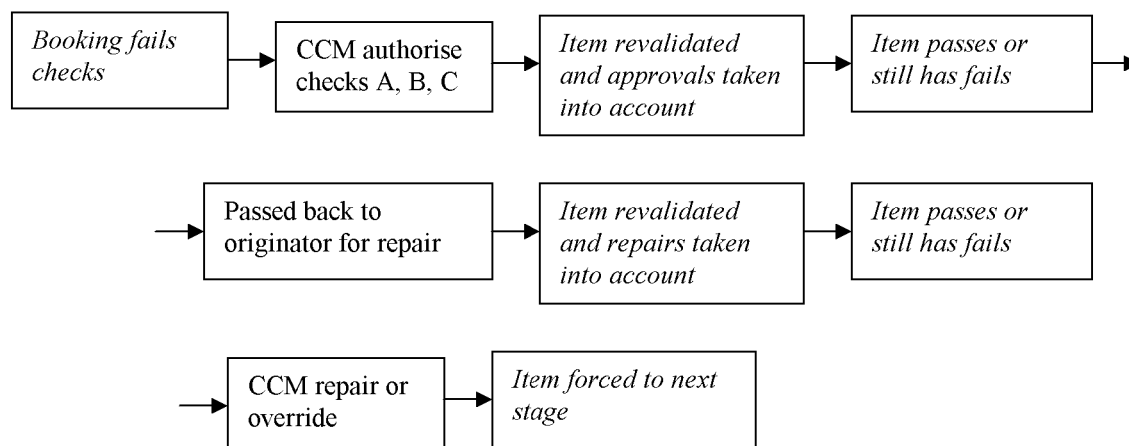
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#### 4.2.9. Process Name: STP Fails Repair Handling – Ref 1.2.2

To create a process where by items that fail one of the STP checks can be repaired within or outside of CCM. Note the authorisation of items that fail certain of STP checks will remain within CCM's control. These items have generally be noted in the individual documents

Items that fail an STP check will require approval or amendment. Approvals will be handled within Cash Management. Amendments should be handled by the originator of the request. If the originator cannot amend, CM will require an override ability to do so themselves and to either repair, force the request through or cancel.



This implies CM will require a screen where they can undertake both approvals and amendments. When an item is flagged as requiring multiple approvals by CM, CM should have the flexibility to approve one, some or all of the items open simultaneously.

Once a request has been approved (partially or complete) it should pass through checks again. If fully approved the item should pass these checks unless another one arises in the interim (say failed on escalation, but before approval time has moved on and funding deadline has passed, then the item should fail the Funding Deadline check). If only partially approved then items that have not been approved should again flag along with any new fail.

An external movement request that falls into repair should appear in the funding numbers as a pending number.

Amendments to static, etc. should be passed back to the originator of the request to effect the changes. To allow for the different capabilities of the source system, GCCM D&R will have two automatic processes for distributing the amendment request, which one of the processes is to be used should depend on the source system that generated the request rather than the internal Business Account that is involved in the movement. (The setting of the repair process will be part of the source system static set-up on D&R.)

To reflect the different processes by which messages are repaired, the failed items should be shown in different repair queues within the system. This will allow CCM to quickly identify items requiring their

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approval and ensure items are being repaired in a timely manner by the users directly or through the source systems. A suggest set-up would be

- Items requiring CCM approval
  - Sub-divided by currency and error
- Items requiring Compliance approval
  - Sub-divided by currency
- Items requiring manual repair
  - Sub-divided by currency and error
- Items sent for repair
  - Sub-divided by currency and source system

Note that it may be possible for an item to appear in three queues simultaneously; as item requiring CCM and Compliance approval could also require repair but at this point it is not expected that items will be sent both for manual repair and back to the originating system.

However as implied above a user should still be able to access a message sent back to the originating system and update the request within D&R so that it passes the STP engine.

#### **4.2.9.1. Option 1 Web Access to Amendments**

Items for repair are automatically emailed to the user group responsible for the Business Account quoted on the request. The email would contain a link back to the Business account. The link would open to either:

- The standard view for the business account (to be detailed later but essentially designed to look like a summary statement with drill down to the detail) in which users could recall a request by number, by drilling down on the appropriate item or recalling items awaiting amendment or approval of an amendment.
- Or a special screen showing all items awaiting amendment or approval of an amendment in order.

The users would then be able to edit the relevant 'breaking' details only and save the amendment for approval or Cancel the request.

The number of approvals required for an amendment will be as defined in the Business Account static.

#### **4.2.9.2. Option 2 Feed back to source systems**

Items for repair are sent back to the GCCM Gateway that then returns them to the appropriate originating source system. The source system reads the return, updates its own records and flags the return to its users. Once the users complete the necessary amendment and it is approved as per the source systems own internal logic. The amended instruction is returned to the GCCM Gateway for reprocessing.

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The Gateway will then pass to the updated request the Payment Import module. This will need to recognise that the item is not a duplicate but an amendment to an earlier transaction. Once it does so it should update the appropriate record in GCCM, increasing the version number and status as a result.

Regardless of the method used to repair an item, the request should again be passed back through the STP engine to ensure the repair addresses the highlighted issue(s).

If an item fails for a second time, then it should go to the Cash Mgmt exception queue for them to review.

Items that remain awaiting approval or amendment beyond their value date should be cancelled. Back-valued items awaiting repair should be cancelled at the end of the processing day on the day they were submitted or end of the value date they have been funded for, which ever is later.

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#### **4.3. D&R: Detail of External Message Generation Validation (STP Engine) – Ref 1.3**

##### **4.3.1. Process Name: Identify Real World Nostro – Ref 1.3.1.1**

To identify real world account that should be used to settle requested transaction. A request that has come into GCCM that is identified as an external item and so needs to be paid from and / or received into a real world Lehman nostro.

The intention here is determine which nostro account is most appropriate under any given combination of internal Business Account, legal entity, regulations and Treasury funding availability. Once the nostro account is identified the funding request should move from Pending Assignment of External Account to Pending Settlement in the appropriate nostro account.

The choice of nostro account through which to pay an item is complicated by the variety of regulations and individual business requirements that the Firm currently supports. The process described below is an attempt to work around the current set-up to minimise the initial disruption to the current operating environment while allowing traffic to be consolidated and a simpler process emerge over time.

The basic premise is that if a request sent to GCCM quotes a Business Account number that is directly linked to external account as the account to be debited / credited by a request then the nostro account should be used as the default by the business and GCCM acts as a wash through. If an external account does not exist then the request is processed through the entity nominated as the Funding entity for the legal entity in which the Business Account resides in and intercompany journals are created to show movement on behalf of the originating entity.

It is also possible that traffic for a business may have to settle for whatever reason through a nostro account in a particular entity (as a result of historical set-up) and for this reason there exists the concept of Paying Agent that could be different from the Funding Agent. This scenario will be used if:

- LBI retains a USD nostro account to settle its own activity, funded by LBHI, yet pass certain currencies through a general nostro account.
- To manage the migration of LBSFI non-USD activity which settles through LBI's nostro accounts yet is funded by LBHI UK Branch's nostro accounts.
- The Treasury entities themselves where they act as Paying Agent for each other. For example the USD funding relationship is one of roll-up from LBAH to LBHI UK Branch to LBHI.

Finally to overcome issues such as Euro-In Currency process or cross-currency funding, GCCM will need to be able to convert traffic between currencies and pay them through the appropriate real-world account. In these cases the external nostro should be chosen based on the currency of the final payment: this will be quoted for individual items but may be automatically derived for more generic items such as Euro-In currencies and so noted on the request by GCCM.

Once the nostro account is identified the funding request should move from Pending Assignment of External Account to Pending Settlement in the appropriate nostro account.

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The process described below is assumed to work automatically but it should remain possible for a Cash Mgmt user to override the defined external account used for settlement should the occasion arise (for example money market deals from TWS including Balance Swaps). Other overrides will also need to be accommodated. These include:

- The intraday release function which may override the external nostro to be used to continue the routing of payment activity should the default nostro account 'max' out.
- The choice of Payment Channel
- Invocation of a back-up nostro account.

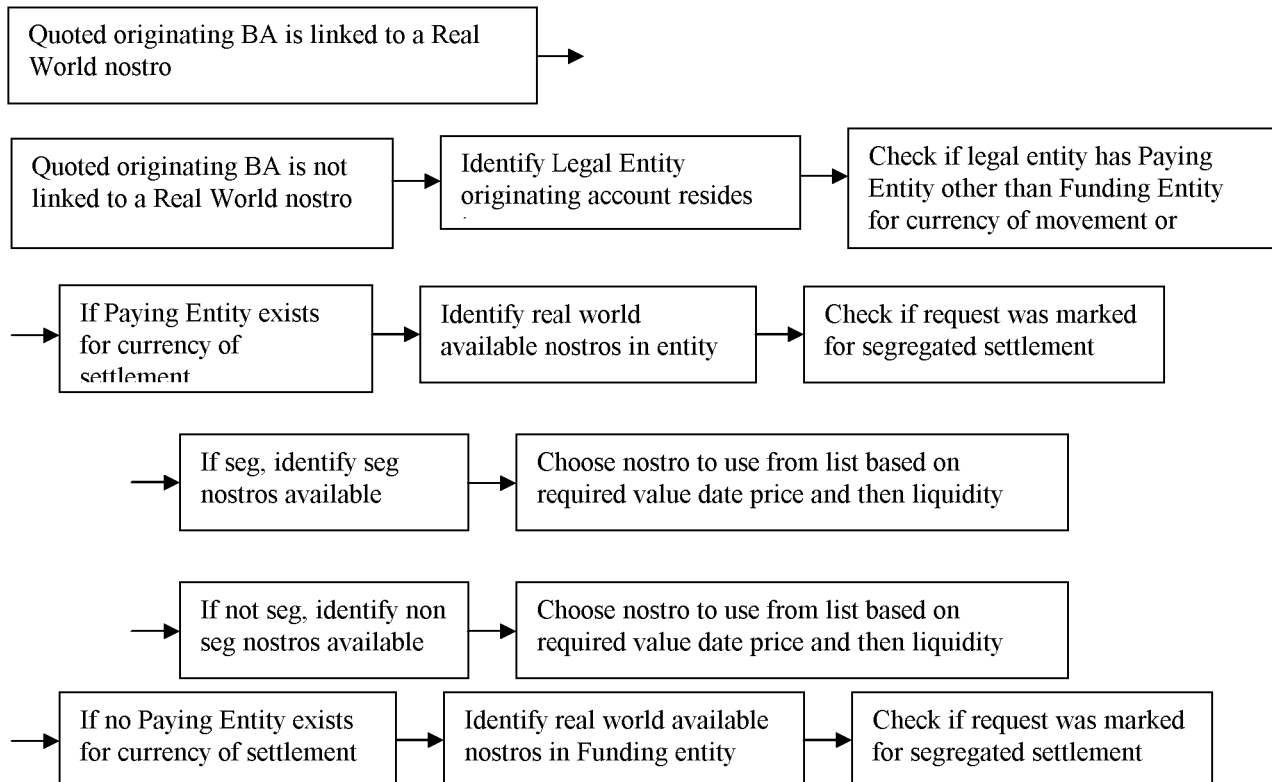
#### Notes

1) If the choice of Payment Channel or invocation of back-up nostro account occurs then nostro positions and accounting should reflect this (though in both cases the accounting to the Business Account should pass through the designated Funding Entity for that Business account and any additional intercompany journal / position should be created between the Funding Entity and the owner of the external account used.)

2) An amendment of external nostro should occur before accounting is generated as the generation of accounting is assumed to occur after settlement.

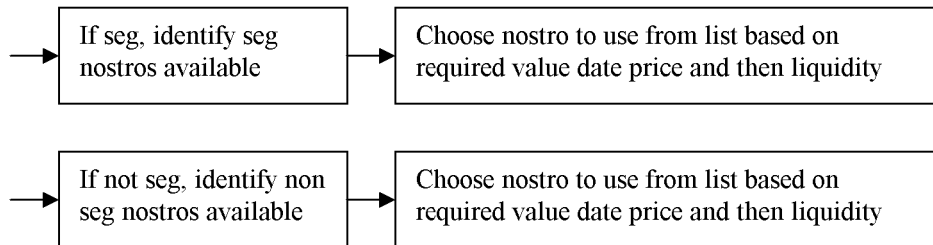
#### 4.3.1.1. How process could work:

The following steps indicate how the nostro account would be chosen. This is explained in more detail below.



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4.3.1.1.1. If the external account exists:

If the Business or Originating Account quoted on the instruction is defined as linked to a Real World / External nostro in the account static, then GCCM should route the external message (e.g. Swift) through this Real World account. GCCM will still produce accounting through this may wash through the entity (i.e. net to zero).

This simplification may cause an issue in Europe and Asia where Ops use the same ITS nostro for free cash and DVP activity and accounts classed as Real World Depots or Margin accounts should not be used for free cash activity only funding movements. In particular these external accounts usually suffer from higher payment and interest fees for non-DVP settlement.

To get around this issue Ops can either:

- Be provided with two internal Business accounts (one for the free activity that is purely internal and one that represents the external) that they reconcile the trade bookings against and should quote the appropriate details on the request.
- Or GCCM is allowed to override the external account by using the Funding / Paying Entity for all activity not flagged as FUND where the external nostro account type is not a Nostro.

4.3.1.1.2. If the Business Account only has a Funding Entity for the currency of the movement:

If the Business or Originating Account quoted on the instruction is defined as an Internal Business account in the account static (and the Business account is not linked to an external nostro), then GCCM should route the external message (e.g. Swift) through to the appropriate the Funding Entity.

In the Funding Entity the nominated external account should be used.

It is possible that the Funding Entity may also not have a real world account in the specified currency in which case GCCM should pass the instruction on to the Funding/ Paying entity flagged in its records for settlement.

Accounting should involve journals to the Business account, Real World Nostro and intercompany accounts.

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4.3.1.1.3. If the Business Account only has a Funding Entity for the currency of the movement but the Business Account is marked as a segregated cash account:

If the Business or Originating Account quoted on the instruction is defined as an Internal Business account in the account static, then GCCM should route the external message (e.g. Swift) through to the appropriate Funding Entity marking the request as a segregated one.

In the Funding Entity the nominated external account for segregated activity should be used. If no segregated account exists the nominated default external account should be used.

It is possible that the Funding Entity may also not have a real world account in the specified currency in which case GCCM should pass the instruction on to the Funding/ Paying entity flagged in its records for settlement.

Accounting should involve journals to the Business account, Real World Nostro and intercompany accounts.

4.3.1.1.4. If the Business Account has a Paying Entity for the currency of the movement:

If the Business or Originating Account quoted on the instruction is defined as an internal Business account in the account static and a Paying Entity is nominated, then GCCM should route the external message (e.g. Swift) through to the appropriate Paying Entity.

In the Paying Entity the nominated external account should be used.

It is possible that the Paying Entity may also not have a real world account in the specified currency in which case GCCM should pass the instruction on to the Funding / Paying entity flagged in its records for settlement.

Accounting should involve journals to the Business account, Real World Nostro and intercompany accounts; though for the Business Account the accounting should first pass through the designated Funding Entity for that account and an additional intercompany journal / position should be created between the Funding Entity and the Paying Entity.

This two step accounting process may seem overkill but is designed to address the process for funding and settlement of the traffic until the process itself is simplified and as a result allows the regulated entities to minimise the number of intercompany positions created by the use of a Paying Entity.

4.3.1.1.5. If the Business Account has a Paying Entity for the currency of the movement but the Business Account is marked as a segregated cash account:

If the Business or Originating Account quoted on the instruction is defined as an internal Business account in the account static and a Paying Entity is nominated, then GCCM should route the external message (e.g. Swift) through to the appropriate Paying Entity.

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In the Paying Entity the nominated external account for segregated activity should be used. If no segregated account exists the nominated default external account should be used.

It is possible that the Paying Entity may also not have a real world account in the specified currency in which case GCCM should pass the instruction on to the Funding / Paying entity flagged in its records for settlement.

Accounting should involve journals to the Business account, Real World Nostro and intercompany accounts; though for the Business Account the accounting should first pass through the designated Funding Entity for that account and an additional intercompany journal / position should be created between the Funding Entity and the Paying Entity.

4.3.1.1.6. If the Business Account is set-up not for the currency of settlement

If the Business or Originating Account quoted on the instruction is defined as being set-up for a different currency from the currency on then the individual request then the external account should be identified by looking for the appropriate currency account for the Funding Entity linked to the Business Account.

In this case additional cross-currency accounting will need to take place.

4.3.1.1.7. Example of Paying Entity

*Post GCCM implementation LBI USD traffic is required to pass through LBI's USD account. For an instruction sent from MTS to GCCM, MTS quotes the internal Business Account to debit. GCCM goes to generate payment for settlement and identifies legal entity from internal Business Account static.*

*This legal entity static identifies LBHI as Funding Entity and LBI as Paying Entity. Latter overrides former, so GCCM then checks tables 5.1.3.1.2 Paying Entity table and 5.1.3.1.3 External Nostro numbers to identify the account to be used for the cash movement – CCY is included for speedier checking, if the currency of the payment doesn't exist in list request flips back to Treasury Funding Entity. Accounting credit is passed to appropriate account.*

*Now the above movement needs to be funded so the external nostro account needs to receive funds from LBHI and intercompany record created. Above process would necessarily create the correct result. So how is this driven? From the account drawing down via a funding 'special' process (FUND) against the main account of the Funding Entity.*

4.3.1.1.8. Multiple External Nostros in the Funding or Paying Entity

has more than one external nostro account in currency of the request.



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#### **4.3.2. Process Name: Determine Payment Channel – Ref 1.3.1.2**

This section outlines how to identify the optimally settlement method for a particular external cash transfer and generate appropriate message, such as Swift. The intention is to determine what payment channel should be used by GCCM externally to efficiently and cost effectively settle the request.

The choice of how to pay an item is complicated by the variety of options that the Firm currently supports and in theory has available to it. The process described below is an attempt to work around the current set-up to minimise the initial disruption to the current operating environment while allowing traffic to be consolidated and a more cost effective process emerge over time.

The basic premise is that the default payment channel for an existing external account has already been defined and this should be utilised until additional channels are added, at which point a default will nominated, though GCCM should use the least cost method available for a given value date, urgency and amount combination.

The process described below is assumed to work automatically but it should remain possible for a Cash Mgmt user to override the defined channel used for settlement should the occasion arise. Other overrides will also need to be accommodated. These include:

- The intraday release function which may override the channel to be used to continue the routing of payment activity should the default 'max' out.
- Invocation of a back-up account.

It is though expected that the majority of accounts will have only one option.

If after the choice of payment channel has been identified change of external account occurs, the funding balance for both accounts should be updated appropriately (out of one and into the other). This should not effect the overall funding for the Firm though it may affect a specific entities funding.

Note

1) If the choice of Payment Channel or invocation of back-up account occurs then nostro positions and accounting should reflect this (though in both cases the accounting to the Business Account should pass through the designated Funding Entity for that account and any additional intercompany journal / position should be created between the Funding Entity and the owner of the external account used.)

2) An amendment of a channel should occur before accounting is generated as the generation of accounting is assumed to occur after settlement.

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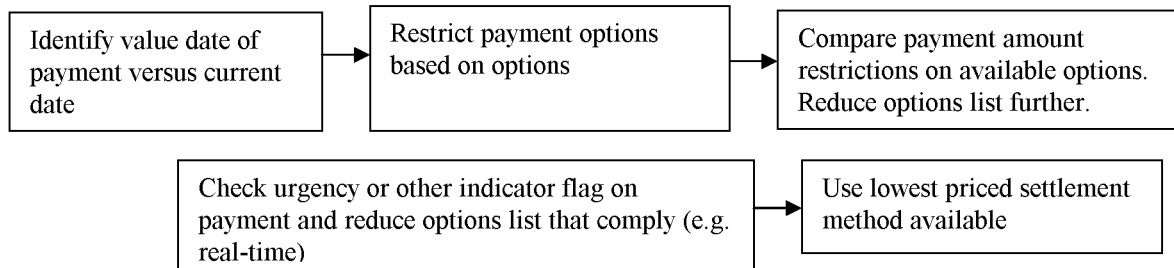
#### 4.3.2.1. How process could work:

The following steps indicate how the channel would be chosen. This is explained in more detail below.

##### Payments Only

Only one option exists

##### Otherwise



##### Receipts

Notify Agent bank by lowest priced method for receipts

#### 4.3.2.1.1. Example of Payment Channel Rule Set for USDs

This is represented by the following matrix of choices for USD traffic:

Payment Channel	Restrictions	Value Date difference	Amount	Urgent Request	Price
ACH		X	Less than Y	No	A
Agent bank via SWIFT		0	Unlimited	Normal / Urgent (within 1 hour)	B1
Agent bank via CPU		0	Unlimited	Normal / Urgent / Immediate (within 30 minutes)	B2
LB Bank FED WIRE		0	Less than Z	No	C

Where:

- Value Date difference is number of days between required value date and current date
- Urgent request is worst case time to process once released from GCCM; for example message authorised for release after agent payment cut-off should probably go via CPU to ensure released externally from Agent
- B1 and B2 will probably be similar Agent costs but fully loaded costs including infrastructure / messaging costs may create difference
- C would be lower than B's but potentially more than A

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4.3.2.1.2. If there is only one external channel:

If for the chosen external Nostro only one option exists, then GCCM should route the external message through this option (e.g. Swift).

4.3.2.1.3. If more than one option exists:

If for the chosen external Nostro more than one option exists, then GCCM should route the external message through the option that is most cost effective for the Firm given the information available on the instruction. (Note the Intraday Release function will be allowed to override the choice of payment channel should it / a Cash Mgmt User believe that rerouting a request improves the Firm's intraday liquidity.)

GCCM should go through the following checks, though the default for a nostro should always be used if there is any doubt:

- For the value date requested what options are available?
- For the amount what options remain available?
- For the urgency flags set on the message what options remain available?
- For the remaining options use the one with the lowest Price band.

Note a further check might be applicable for receipts as some channels do not accept Preadvice notifications.

Once the channel has been determined the message should be constructed to pass straight through the channel (see section on Message Generation and Outgoing Traffic Formatting in term) and passed to the Intraday Release function.

Items that are destined for batch release should be written to the appropriate file. The sending / release of any batch file will be contained within the Intraday Release function.

It may be possible for the Firm to leverage its bank licenses by having both Lehman Brothers Bank and Bankhaus act as cash settlement agents for activity generated elsewhere in the bank. In these cases the channel will be flagged as Internal Option.

Items so flagged should then be moved to the external nostro for the entity flagged as owning the selected Internal Option. Once in that account the external messages should be generated as appropriate for that account.

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#### **4.3.3. Process Name: Message Generator – Ref 1.3.1.2**

This section outlines the message that can be generated, e.g. a Swift message, to request the settlement of action an external movement. The message will be formatted in accordance with the formatting laid out in the next section, Outgoing Traffic Formats.

This definition outlines the five basic messages to be created by GCCM:

1. Bank to Bank Payment
2. Customer Payment
3. Receipt
4. Cancellation
5. Amendment

Combinations of the messages maybe created, for example:

- Cover method payments would require Bank to Bank and Customer Payment messages
- Nostro funding would require Bank to Bank and Receipt messages.
- Back-valued payment would require a payment with current value and an amendment message

Once generated, the messages should go to the Intra-day release function for release with their status on the reporting screens updated.

External messages should be generated a set number of days in prior to value and not before; for example for a payment received on 1<sup>st</sup> value 14<sup>th</sup> for USD the external message does not need to be created on first but say on 13<sup>th</sup>. The period forward of value that messages should be generated should be set as part of the currency / external nostro account static

#### **4.3.3.1. Payments**

GCCM should create a payment message whenever the amount booked or advised by Operations is a debit in cash flow terms. The exact message created will be determined by the chosen Payment Channel.

Note payments cannot be sent through most channels back valued, therefore GCCM will need:

- to automatically generate the payment message with the date the item has been funded for
- and an amendment request to have the item processed with good value and the beneficiary made whole for the value date difference.

##### **4.3.3.1.1. For SWIFT**

The payment will either be to another financial institution or a non-financial institution customer.

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- Payments to a financial institution should be by MT202. Financial Institutions will generally either have a BIC code or a Fed Wire number, though exceptions exist.
- Payments to a non-financial institution should be by MT103.

The request flag should be set when the message is sent to GCCM but the simple split above can be used to determine the appropriate message type.

In addition a third option should be available to the source systems and for CM use if editing a payment request and this is a Cover payment. Cover payments involve a combination of MT202 and MT103 being sent.

- The MT202 is sent to the Account With Bank on the details supplied quoting this bank as the beneficiary on the 202.
- The MT103 is sent direct to the Account With Bank indicating they should have received funds from Lehman's correspondent bank and that they should be applied to the original beneficiary.

#### 4.3.3.1.2. For Batch / Clearing House items

Payments that will be settled as part of batch file sent to a bank for processing should be written to the file.

Batch systems do not generally differentiate between payments to a financial or non-financial institution but do require account numbers to be quoted in the beneficiary's details rather than a BIC code.

#### 4.3.3.2. Receipt

Certain currency markets / agents do not count Preadvices of incoming funds as confirmation that funds will be credited to a nostro account (and the Agent does not count towards either the account intraday balance or towards their own funding).

However GCCM should create the messages for all currencies in the appropriate format for the payment channel chosen for the notification as certain institutions, in particular Euroclear, make use of them even if the market standard for a currency is not to count them (e.g. GBP & USD into Euroclear).

The release of these messages will be controlled within the Intraday Release function.

#### 4.3.3.2.1. For Swift

MT210s should be created using all available information.

Note at the nostro account level D&R should allow users to restrict the sending of MT210s externally (though D&R should accept MT210s for all Internal Business accounts) if they will not be used by Agent.

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#### **4.3.3.3. Cancel**

When an item has been cancelled but has been released to the Agent bank for processing, a cancellation message will need to be sent.

GCCM should generate the appropriate message where it can (initially may only have Swift cancellations MTn92 messages) and place it in a queue for release by CM. The sending of the cancellation message should be noted on the D&R record of the request (this info should be passed to GSSR).

#### **4.3.3.4. Amend**

When an item has been amended but has been released to the Agent bank for processing or back value requested, an amendment message will need to be generated automatically.

GCCM should generate the appropriate message where it can (initially may only have Swift amendments MTn9? messages) and place it in a queue for release by CM. The sending of the amendment message should be noted on the trade (this info should be passed to GSSR).

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#### **4.3.4. Process Name: Outgoing traffic formatting – Ref 1.3.1.4**

Each payment channel available to GCCM will have its own specific formatting requirements and this section outlines some basic rules. Further work will be required to analyse each channel as it is set-up, in particular any local specific requirements such as Swift Zengi, kanji or other non-roman alphabet characters in local interfaces will need to be catered for.

Note in addition many Agent banks impose their own specific STP requirements on top of the basic ones and in time GCCM will need to be able to cater for these specifics.

Original currency amounts should be quoted on the message if the request had been for example in a Euro-in currency. Items directly in Euros do not need to append Euro currency original amounts.

The following rules are based on Swift's suggested formatting of its messages for STP purposes. Similar rule sets will need to be created for ACH and other payment channels. Note these rules sets should not be mandatory for every payment channel (as it would not always make sense).

#### **4.3.4.1. Payment Channel - Swift**

##### **4.3.4.1.1. Rule 1**

Any field in the 50 range used in the MT202 should have an 8 or 11 character BIC in the field.

##### **4.3.4.1.1.1. Exceptions to Rule 1**

For STP purposes a BIC is not always required in fields 56 or 57 provided a clearing code for the institution is quoted. If a clearing code is used i.e. a CHAPS sort code or Fed Wire reference, the code should be in the text field in GCCM suffix will be D and the format of the message will be styled as follows dependent on the clearing system used:

57D: //SC309287  
Lloyds Bank  
Fenchurch Street Branch

Each clearing code is shown with a two-letter prefix followed by a set number of digits.<sup>5</sup>

##### **4.3.4.1.2. Rule 2**

If the ultimate beneficiary is a financial institution with a BIC code the message type should always be a MT202. A BIC address should never be quoted in field 59 of a MT103, if it is the message should be a MT202

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<sup>5</sup> A list of the codes and number of digits used in clearing codes can be found in the SWIFT user guides.

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4.3.4.1.3. Rule 3

Free format text information for the beneficiary should generally be detailed in field 70 of an MT103 and field 72 of a MT202. Occasionally both fields are used on an MT103.

4.3.4.1.3.1. Rule 3 Sub-rule 1

Limited predefined code words are allowed in field 72, if these are not quoted a generic choice, such as BEN should be added.

4.3.4.1.3.2. Rule 3 Sub-rule 2

There is no restriction in field 70 however it is better to add no extraneous data to any message.



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#### 4.3.5. Process Name: Intraday Release – Ref 1.3.1.5

This process will control the release of traffic through a particular nostro account or even currency to maximise the 'flow' through the Firm at the lowest cost by making use of free intraday credit lines in preference to charged or secured intraday credit lines. The process will be semi-automated with certain items potential going straight out, others held and released in individual or in batch, or released in an automatic phased approach. Once released the items should be passed to the Gateway for processing via the appropriate channel.

All items should be sent to a pending release queue by currency. Items for batch file processing should be written to separate queues to those that are to be processed individually. Every queue should be monitored via a screen (s) showing queues and number of pending items per queue. The screen should have a drill down facility through to show the pending items in a particular queue.

The system should allow messages to be released up to a debit cap / intraday limit for the nostro account. Note debit cap / intraday limit will be treated as synonymous for the development of GCCM D&R, though the debit cap implies a harder limit than intraday limit. The debit cap / intraday limit should be set per nostro account as part of its static set-up.

The intraday balance should be tracked through the day and compared with the debit cap. The release of any messages that would take the balance beyond the debit cap should be halted until funds have been received into the nostro account reducing the debit balance. Cash Management will retain the ability to override the debit cap restriction and manually release items. GCCM D&R should be able to report any exceeding of the debit cap so that any costs implications of the excessive overdraft position can be properly allocated back to a business line.

For items that have been released and create a requirement above the debit cap, CCM users should have the ability to impose a penalty charge on the request to offset any cost implications. This charge should use the same methodology as the charging imposed for funding a movement after the funding cut-off for the currency of the request.

Until the system has an external feed giving real time balance information<sup>6</sup> (or for nostro accounts where this is not available), the intraday balance should in general be calculated as:

- Real World Start of Day balance
- Less any released payments that have been confirmed
- Plus any confirmed receipts
- Less any released payments that have not been confirmed

Though the system will need to allow for differences Agent bank methodologies. Unconfirmed receipts should not be included for intraday balance reporting.

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<sup>6</sup> CCM have investigated various options for real time balance information but have not yet made a decision on which approach is the most cost effective for the requirements.

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Within the set-up for each queue it should be possible to flag which intraday process should be followed. The options that have been defined are completely manual, semi-automatic release or completely automatic release. Each option is outlined in more detail below.

#### **4.3.5.1. Manual Release**

Once in a manual release queue a user should be able to highlight a single or multiple items and either:

- Authorise them for release
- Request items are netted – see section on netting for further details
- Request an item is split – see section on netting for further details
- Request items are Unnetted (net reversed) – see section on netting for further details
- Cancel the outgoing message in case of errors
  - Should the cancellation of an outgoing message require separate authorisation?
- Delete the outgoing message
  - Not through message should be deleted the accounting should still occur.
- Amend the real-world account to send the message out of (this should cause the message to be regenerated)
- Reroute the payment changing the Payment Channel (this should cause the message to be regenerated)

At the point a request is authorised for release the payment should be compared to the intraday limit / debit cap number and the current nostro account balance. Where sending the payment would cause the limit to be breached the system should indicate this to the user and give them the option to not release the payment at that point. Messages that are not released should be put back into a pending release status.

Note for the current nostro account balance the system should make use of any real-time feed of account balance data first and if this is not available then its current projected intraday balance based on confirmed and released activity.

Note only likely to be payments that are moved between real world nostro or payment channels but should allow Preadvices to be affected as well in case clients have paid incorrect instructions.

#### **4.3.5.2. Semi-Auto release process**

Items should be listed in priority order using similar set of ordering criteria as above:

1. Urgent flagged items
2. Incoming notifications
3. Outgoing payments under preset amount (definable by queue)
4. Remaining outgoing payments

And should be grouped within a priority by the internal Business Account and Beneficiary of the payment.

A CM user should be able to highlight a single or multiple items and either:

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- Authorise them for release
- Request items are netted – see section on netting for further details
- Request an item is split – see section on netting for further details
- Request items are Unnetted (net reversed) – see section on netting for further details
- Cancel the outgoing message in case of errors
  - Should the cancellation of an outgoing message require separate authorisation?
- Delete the outgoing message
  - Not through message should be deleted the accounting should still occur.
- Amend the real-world nostro account to send the payment out of (this should cause the message to be regenerated)
- Reroute the payment changing the Payment Channel (this should cause the message to be regenerated)

Note only likely to be payments that are moved between real world nostro or payment channels but should allow Preadvices to be affected as well in case clients have paid incorrect instructions.

At a certain point in the day (for example within an hour of payment cut-off for the real world nostro) or when the queue length reaches a certain size the system should then be allowed to process the release of certain traffic automatically.

Items should only be auto-released if they meet strict criteria and should be action in line with priority ordering / listing of the requests. The following are some suggestions:

- Amount out under USD1mm equivalent
- Amount in under USD10mm equivalent
- Beneficiary account is not a Lehman nostro or Internal Business account

Items should continue being processed either after auto release or manual release until the balance reaches the debit cap. At this point payment should be held back (Preadvices can continue to go out) until the balance on the nostro account reduces (this will happen as incoming funds are credited to the nostro account at the bank).

As individual queue lengths build up it is likely that CM Users will need to go in and release items through to the bank that would cause the debit cap to be exceeded. This should be allowed. In addition if there are pending payments still in the queue within an hour of the payment cut-off, it should be possible for the system to override the debt cap control and continue sending items itself to prevent fails.

#### **4.3.5.3. Auto release process**

All items in an auto-release queue should be prioritised in the following order

1. Urgent flagged items
2. Incoming notifications / Preadvices
3. Outgoing payments under preset amount (definable by queue)
4. Remaining outgoing payments

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Within each of these prioritises, items should be released externally using the First In First Out (FIFO) principles.

Items should continue being processed until the balance reaches the debit cap. At this point payment should be help back (Preadvices can continue to go out) until the balance on the nostro account reduces (this will happen as incoming funds are credited to the nostro account at the bank).

As individual queue lengths build up it is likely that CM Users will need to go in and release items through to the bank that would cause the debit cap to be exceeded. This should be allowed. In addition if there are pending payments still in the queue within an hour of the payment cut-off, it should be possible for the system to override the debt cap control and continue sending items itself to prevent fails.

#### **4.3.5.4. Batch Files**

The files that have been created for batch processing payment channels should appear in their own queues by currency and agent bank. The summary screen should show number of files and number of items within the files.

A user should be able to drill down into a queue and be shown the individual files including information of channel and number of items in the file, value date of items in the file.

User should be able to release a file by selecting from the list and authorising it to go.

#### **4.3.5.5. Notes on Release methods**

1) There should also be a simple way to hold all traffic for certain nostro accounts / currencies overriding the default for the effected nostro accounts to allow particular payments to be prioritised or awaiting incoming funds before activity is released. It should also be easy to change back so that once the particular items have been paid or received normal processing can resume.

2) As well as the basic release queue per nostro account, the system should allow sub-queues for priority, value and / or legal entity making the payments. Therefore it should be easy to set and configure existing and new queues.

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#### **4.3.6. Message Acknowledgement**

It is expected that for each individual message or batch file sent from D&R will be acknowledged by the Payment Channel it is sent to, for example MINT should confirm back that it has received messages from D&R and been able to 'take in'.

Where the connection to the Payment Channel is not direct (e.g. via MINT for SWIFT) it is likely that the bridging system will also send back statuses indicating that it is successfully processing the item and has released the request or file through to the chosen Payment Channel connection. It turn the Payment Channel will confirm its acceptance or rejection of the message or file.

Any such acknowledgements should be received into D&R updating the statuses of the items in the release queues. It should be possible to filter the queues to identify items yet to be released, released not acknowledged, etc., so for example SWIFT will ACK messages that it can successfully process.

Note for batch file based Payment Channels, the channel may confirm back acceptance or otherwise of the overall file and then of the individual requests in the file. D&R should be able to take in and report both levels of acceptance.

These final status messages for each individual message should be passed back to originating systems to show that each message has been successfully sent from D&R.

##### **4.3.6.1. Failed messages**

As is noted above while messages can be accepted by the Payment Channel they may also be rejected or fail during processing. Depending on the point of failure, GCCM D&R should be able to allow users to amend the message and resubmit. At other points of failure it may be easier to repair in the bridging system, though this will reduces the envisaged benefit that D&R will contain a copy of the final message sent out for each request submitted to it.

For messages that are not accepted by the bridging system or Payment Channel, D&R should allow CCM users to access the message, amend the incorrect details and submit the request for approval at which case the external message should be regenerated – with a new unique id – and sent to the appropriate release queue again.

For messages that are accepted by the bridging system (or Payment Channel) but fail a check within the system (or Payment Channel), depending on the system and its processing capabilities, CCM users may have to access the bridging system and repair the message in the system.

However if the system allows for amend messages to be submitted to after reporting a fail, D&R should allow CCM users to access the message, amend the incorrect details and submit the request for approval at which case the external message should be regenerated – with the original unique id – and sent to the appropriate release queue again.

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#### 4.3.7. Process Name: Netting – Ref 1.3.1.6

As mentioned in the Intra-Day Release process, allow flows to be netted or bulked together to minimise the number of individual cash flows, identify opportunities where netting could have taken place though items were paid gross and allow flows to be split down into multiple flows to allow large amounts to be paid without creating intraday liquidity positions.

By netting, one single payment could be made from multiple numbers of payment and/or receipt transactions, thereby reducing costs.

External transactions could be netted only if they meet the following criteria:

- Same currency
- Same agent bank
- Same external bank account number
- Same counterparty/customer<sup>7</sup>
- Same payment channel
- Same value date
- Same legal entity

Internal transactions could be netted for the same counterparty/customer across legal entities. GCCM needs to validate and when the legal entities are different, provide facility for user to select a SSI to use as additional criteria. User would then confirm by hitting 'APPLY' or 'CONFIRM'.

If an during the process of netting instructions, the users selects part an internal transfer where GCCM D&R is responsible for generating the payment and receipt messages and these requests have been linked in advance (for example the cash funding of an external account from a main account), GCCM D&R should inform the user of the linked request.

The user should then be able to request the system to net up any associated linked items automatically to ensure the expected activity through the first nostro account matches that through the other nostro account. So for example a series of pays from one nostro account, linked to a series of receipts elsewhere, could be netted and the receipts would be netted automatically.

The amount of the netted transaction will be the sum of the amounts of the individual messages, allowing for the direction of the individual flows (i.e. payments are negative and preadvices are positive). If there were two payments, the combined would still be a payment of a larger amount. If there were a payment and a receipt, the resultant is either a payment or a receipt.

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<sup>7</sup> Currently CM matches across customer but only for internal flows, i.e. LBCC, LBHI and LBI. Hence need to be able to select SSIs to be used if multiple customers selected

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#### 4.3.7.1. Manual Process

It is expected that users will select the trades from the Intraday Release queues, highlighting the items to be included and the selecting the netting option. The highlighted flows would then become available in the netting screen.

Alternatively user will enter the netting screen and be able to search for a particular counterparty/customer number, nostro account number or counterparty/customer name. It should be possible to narrow this search further by currency. GCCM will return a list of transactions for the specific counterparty / nostro account.

Payments							
Ref Id	Message Type	Bank	Bank Account	debit/credit	Amount	Currency	Value Date
001A	MT202	Chase		12334 debit	-100000	USD	July 21, 2004
Receipts							
Ref Id	Message Type	Bank	Bank Account	debit/credit	Amount	Currency	Value Date
033B	MT210	Chase		12334 credit	74000	USD	July 21, 2004

User will highlight or check those items to be netted. GCCM will validate on specific fields, see Rules below. Once these validations are passed, then GCCM will assign a Net id to the individual items as well as to the newly created netted message.

The status of the individual items should be changed to "NETTED".

The resultant new message will be sent back to the queue for release with the appropriate priority. Note that to ensure the process is properly controlled, especially as the system may allow cross netting, the process of netting and splitting should require two separate users (or four eyes). Specifically CM User 1 would net / split messages and then a second distinct CM User would have to release the resultant message(s). In fact net / split items should be ineligible for auto release to ensure second touch always happens.

If a source system sends a request to amend or cancel a request that has been bulked, the bulked messages should fall into repair if it has not been released. If it has been released then the amend / cancel should be flagged to CCM for human intervention.

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Netting		User highlights those items to net. GCCM will log a net_id to the resultant combined message as well as the individual items. GCCM will change Status to 'Netted'							
Payments									
Ref Id	Message Type	Bank	Bank Account	debit/credit	Amount	Currency	Value Date	Net ID	Published External Status
001A	MT202	Chase		12334 debit	-100000	USD	July 21, 2004	N001	Netted
Receipts									
Ref Id	Message Type	Bank	Bank Account	debit/credit	Amount	Currency	Value Date	Net ID	Published External Status
033B	MT210	Chase		12334 credit	74000	USD	July 21, 2004	N001	Netted
Resultant net message									
		<div> <div>If the credit amount is greater than the debit amount, the resultant message type will be MT210</div> <div>If this is positive, message type is MT210</div> </div>							
MT202	Chase		12334 debit		-26000	USD	July 21, 2004	N001	

#### 4.3.7.1.1. Rules for Netting

- For those items that users have selected to net, GCCM has to validate that the following fields are the same before netting could take place:
  - Value date
  - Currency
  - Counterparty/customer
  - Payment Channel
  - Agent bank
  - Bank account number
  - Legal entity
- Netted messages should create final messages as per the following table:

Message Types	Payment or Receipts	GCCM/ User Option	Resultant payment should be
All 103s	Payments (Non-financial institutions)		103
All 202s	Payments (Financial Institutions)		202
All 210s	Receipts		210
103s and 202s	Payments (Non-Financial and Financials)	Default of 103 Provide Option for User to select	Default 103; override by user option
103s and 210s	Payments > Receipts		103
	Receipts > Payments		210
202s and 210s	Payments > Receipts		202
	Receipts > Payments		210



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- Where the payment instructions for the selected messages are not the same, the list of options should be flagged to the user and they should be request to append the correct / appropriate details
- Field 70 & 72 should be merged and details of gross flows that created the net should also be appended to the additional field.
- Exception to the above fields being the same is for internal transactions where the same counterparty/customer exists across multiple companies. In this situation, provide user the option to select ABA#, Name of Bank, Account number or Name on account. Once done, this additional condition would have to be the same along with the above specified fields to satisfy all criteria for netting.
- Where the urgency settings for the selected messages are not the same, the highest should apply for the netted item.
- Once the transactions are netted, the status should change to show as netted.
- A netted id of the resultant (new) message should be appended to the individual underlying records. This net id should be passed to GSSR.
- The net item should then be inserted back into the Release queue in the appropriate ordering. Net / split items should be ineligible for auto release to ensure second touch always happens.

#### **4.3.7.2. Automated Process for Netting**

The automation of the netting process will be a long term GCCM goal. Therefore at this stage, the netting will be done on a manual basis. Detailed specifications for automated netting will be done at that stage. Netting could only be performed if the counterparty agrees.

#### **4.3.7.3. Un-Netting (Unbulking)**

A user will either highlight items from a release queue and select un-netting or from the netting screen input counterparty/customer and/or currency to identify flow that needs un-netting. User will unselect or uncheck a netted box and click ok.

Once the transaction is affirmed, the net\_id will be removed from the original individual transactions and the resultant combined message. The system should:

- Change the status from 'Netted' to 'Unnetted'
- Re-insert the original individual transactions in the Release Queue.
- Remove the combined resultant message from the Release Queue.
- Mark the combined resultant message transaction for 'DELETION' or 'NOT to be Released' so that it gets cleaned out as part of the nightly process.

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Note once released a bulk message cannot be amended through the system though could allow cancellation.

#### 4.3.7.4. Splitting

Items that have been selected for splitting at the Intra-day Release phase will result in multiple messages being created from a single record. User will select the item to do the split.

<u>Initial Payment</u>						
<u>database</u>						
Bank	bank account	debit/cred	Amount	CCY	Value Date	Ref ID
Chase	12345	debit	\$1,000,000,000.00	USD	July 17, 2004	001F

<u>split</u>																						
Chase; account 12345	-\$1,000,000,000.00		<div> <div>To Generate Payments</div> <table border="1"> <tr><td>-\$250,000,000.00</td></tr> <tr><td>-\$250,000,000.00</td></tr> <tr><td>-\$300,000,000.00</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td>Residual</td></tr> <tr><td>-\$200,000,000.00</td></tr> </table> </div> <div> <table border="0"> <tr> <td>S1001F</td> <td><input checked="" type="checkbox"/> Check Box 4</td> </tr> <tr> <td>S2001F</td> <td><input checked="" type="checkbox"/> Check Box 5</td> </tr> <tr> <td>S3001F</td> <td><input checked="" type="checkbox"/> Check Box 6</td> </tr> </table> <div> <div>User has to click OK before payments are generated</div> <div>This residual amount will go down as each of the entered split payments are ok</div> <div>If user wants to unsplit an item, the residual will increase</div> </div> </div>				-\$250,000,000.00	-\$250,000,000.00	-\$300,000,000.00						Residual	-\$200,000,000.00	S1001F	<input checked="" type="checkbox"/> Check Box 4	S2001F	<input checked="" type="checkbox"/> Check Box 5	S3001F	<input checked="" type="checkbox"/> Check Box 6
-\$250,000,000.00																						
-\$250,000,000.00																						
-\$300,000,000.00																						
Residual																						
-\$200,000,000.00																						
S1001F	<input checked="" type="checkbox"/> Check Box 4																					
S2001F	<input checked="" type="checkbox"/> Check Box 5																					
S3001F	<input checked="" type="checkbox"/> Check Box 6																					

A box should open showing the amount of the item to be split, with an input box and a list of the payments to be generated and total left.

Users will then input the size of the first payment and okay, this instruction should then populate the to-be generated list and the total left should reduce. Users should be free to continue adding individual payments until they are okay with the remaining amount, which will become a payment as well to ensure full amount is available for release. At this point the to-be generated list of instructions and an instruction representing the total left should be inserted into the Intra-day Release queues with the same format and urgency as the original item.

Users should be able to highlight an item in the to-be generated list and delete it. The total left should be amended by the amount cancelled.

The resultant new message will be sent back to the queue for release with the appropriate priority. Note that to ensure the process is properly controlled, especially as the system may allow cross netting, the process of netting and splitting should require two separate users (or four eyes). Specifically CM User 1

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would net / split messages and then a second distinct CM User would have to release the resultant message(s). In fact net / split items should be ineligible for auto release to ensure second touch always happens.

<u>intraday release queue</u>			Original Payment Amount	Split Payment Amount	Ref Id	Split Ref Id
MT 202	Chase	12345	-\$1,000,000,000.00	-\$250,000,000.00 USD	July 17, 2004 001F	S1001F
MT 202	Chase	12345	-\$1,000,000,000.00	-\$250,000,000.00 USD	July 17, 2004 001F	S2001F
MT 202	Chase	12345	-\$1,000,000,000.00	-\$300,000,000.00 USD	July 17, 2004 001F	S3001F
MT 202	Chase	12345	-\$1,000,000,000.00	-\$200,000,000.00 USD	July 17, 2004 001F	

The SSIs including additional data fields should be replicated across the split and residual messages. In addition the original messages amount and reference should be appended into the additional data field.

Once the items are in the in release queue it should be possible to highlight split items and reverse the splitting.

#### Notes

1. GCCM needs to keep track of splitting and unsplitting.
2. It should ensure that the sum of all splits + residual = original amount.
3. If there are splits and none of the whole has been released, allow cancellation but adjust for residual.
4. If there are splits and one of the splits has been released, do not allow cancellation of the whole. Cancellation of the individual amounts should be allowed.
5. By certain point of time during day, alert message to user if sum of splits released < original amount.
6. Users should not be able to net a split item.
7. Users should be able to unsplit items; if part of the split has been released items will be unsplit to the total less the already released amount (Using example 250 released; unsplit creates 750 single amount)

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#### 4.3.7.5. Reporting

At the end of each day GCCM to review that day's payment traffic and identify currency and USD payments that were sent to or receipts that came from the exact same SSIs or to and from the same GARM number. Reports would be generated showing all possible net combinations.

In addition users should be able to an individual GARM id (Lehman customer account) and External Bank Account Number (option to select on Customer Bank Name or Customer Bank Account Number or ABA number) and review the netting options that weren't utilised for an individual GARM id.

Summary

Local Currency Amounts									US\$ Equivalent Amounts		
GARM id	External RW Account	Agent Bank	Currency	Customer Bank Account #	Customer Bank	Payments	Receipts	Total Net	Payments	Receipts	Total Net
123456	12345	Chase	USD	11111	BONY	(1,000,000.00)	2,500,000.00	1,500,000.00			
213457	88883334	Citibank	SING	222222	BONY	(1,000,000.00)	350,000.00	(650,000.00)			
213457	88884443	Citibank	TWD	222222	BONY	(2,000,000.00)	6,578,000.00	4,578,000.00			
9392933	12345	Chase	USD	33333	Fleet	(15,000,000.00)	20,000,000.00	5,000,000.00			
948493	12345	Chase	USD	888888	HSBC	(25,300,000.00)	15,000,000.00	(10,300,000.00)			
948493	34567	Chase	GBP	888888	HSBC	(3,050,000.00)	3,000,000.00	(50,000.00)			
948493	87789	Chase	FRF	999999	HSBC	(6,404,000.00)	4,000,000.00	(2,404,000.00)			
948493	99344	Chase	DEM	888888	HSBC	(74,324,000.00)	6,400,000.00	(67,924,000.00)			
948493	77356	Chase	CHF	999999	HSBC	(1,745,000.00)	740,000.00	(1,005,000.00)			
Double-click to drill down to see details											

Detail

Payments

Date Format needs to be consistent with Region

GARM id	Currency	Account #	Customer Bank	Value Date	GCCM ref id	Ref id	Net Id	Split id	Local Currency Amount	Agent Bank Name	Agent Bank Account #	Source system ref id	Source system
948493	GBP			08/12/04									
948493	GBP			08/12/04									
948493	GBP			08/12/04									
948493	GBP			08/12/04									
948493	GBP			08/12/04									
948493	GBP			08/12/04									
GBP Payments Total									(3,050,000.00)				
Receipts													
948493	GBP			08/12/04									
948493	GBP			08/12/04									
948493	GBP			08/12/04									
GBP Receipts Total									3,000,000.00				

Will be populated with individual records denominated in GBP. If USD Equivalent is clicked, then the report will show an extra column " USD equivalent amount". Total on Local Currency Amount by currency within GARM. Total should match the number on the Summary report.

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#### 4.3.8. Book and Real World Cash Balances

GCCM will host a large number of external accounts, currently approximately 3000, that are managed through a variety of processes. In particular differing accounts are funded versus their actual real world balance at the end of day, actual real world balance at start of day, end of day expected book balance, projected actual balance or some combination of these processes.

To cope with this variety it will be simpler will for GCCM to track both real world and book balances for all the external accounts and let the users of GCCM responsible for Funding accounts to decide the appropriate balance to use when inputting / creating FUND movements. In practice individual accounts will continue to be funded against the appropriate balance for the controls and information for the account.

In addition the system should be able to present running balance data based on the current real-time book balance or real world start of current / end of prior of day balance. In time GCCM D&R should be able to take in intraday external account balance updates and show these alongside the current system generated balances.

Therefore as part of the tracking of activity on accounts, for each account GCCM D&R should record

- Start of Day Book Balance
- Real World Start of Day Balances

And be able to track / create:

- Running Intraday Balances based on Booked Activity starting from Book Balance
- Running Intraday Balances based on Booked Activity starting from Real World Balance
- End of Day Book Balance for Accounted activity

In addition for accounts where external information is available, GCCM should also be able to create

- Running Intraday Balances based on Settled Activity starting from Book Balance
- Running Intraday Balances based on Settled Activity starting from Real World Balance

And / or track

- Actual Intraday / End of Day Balances

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#### 4.3.8.1. Sources of Information

The following table list source / calculation method to be used for each for the above balances

Balance	Source
Start of Day Book Balance	Prior working day's End of Day Book Balance for Accounted activity
Real World Start of Day Balances	<p>GSSR for current start of day balances for the external accounts.</p> <p>GCCM should also record date of last statement feed to show whether balance is current real world or last known GSSR balance.</p> <p>Note where accounts have been grouped on GSSR the individual sub-account statement balances will be required.</p>
Running Intraday Balances based on Booked Activity starting from Book Balance	<p>Calculation process that should continually update (note for usability users should be able to freeze balance on screen). Balance would be net of:</p> <ul style="list-style-type: none"> <li>• Start of Day Book Balance</li> <li>• All individual payments and receipts booked or assigned to particular nostro</li> <li>• Any Projected booking figure</li> <li>• Any FUND entries already booked across account</li> </ul>
Running Intraday Balances based on Booked Activity starting from Real World Balance	<p>Calculation process that should continually update (note for usability users should be able to freeze balance on screen). Balance would be net of:</p> <ul style="list-style-type: none"> <li>• Real World Start of Day Balances</li> <li>• All individual payments and receipts booked or assigned to particular nostro</li> <li>• Any Projected booking figure</li> <li>• Any FUND entries already booked across account</li> <li>• If available any currently failed activity carried over from prior day</li> </ul>
End of Day Book Balance for Accounted activity	<p>Calculation process that should continually update (note for usability users should be able to freeze balance on screen). Balance would be net of:</p> <ul style="list-style-type: none"> <li>• Start of Day Book Balance</li> <li>• All individual payments and receipts booked or assigned to particular nostro that have been Accounted for. That is released to accounting.</li> </ul>

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	<ul style="list-style-type: none"> <li>Any FUND entries have been Accounted for.</li> </ul>
Running Intraday Balances based on Settled Activity starting from Book Balance	<p>Subset of balance that is used for Running Intraday Balances based on Booked Activity starting from Book Balance (if everything settled and there was no outstanding projection amounts then balances would agree.)</p> <p>Calculation process that should continually update (note for usability users should be able to freeze balance on screen). Balance would be net of:</p> <ul style="list-style-type: none"> <li>Start of Day Book Balance</li> <li>All individual payments and receipts that have settled and so Matched</li> <li>Any FUND entries that have settled and so Matched</li> </ul>
Running Intraday Balances based on Settled Activity starting from Real World Balance	<p>Subset of balance that is used for Running Intraday Balances based on Booked Activity starting from Real World Balance (if everything settled and there was no outstanding projection amounts then balances would agree.)</p> <p>Calculation process that should continually update (note for usability users should be able to freeze balance on screen). Balance would be net of:</p> <ul style="list-style-type: none"> <li>Real World Start of Day Balances</li> <li>All individual payments and receipts that have settled and so Matched</li> <li>Any FUND entries that have settled and so Matched</li> <li>Any prior failed activity carried over that has settled and so now Matched</li> </ul>
Actual Intraday / End of Day Balances	<p>Expected to be external feed of current balance information with time stamp at which last update received.</p> <p>Should also allow for ability for users to input balance with a time stamp.</p>

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#### **4.3.9. Process Name: On line Reporting – Ref 1.3.2.1**

This section defines the screens that the various users will interact with the core system via and outlines the basic functionalities for the various user classes. In particular the screens will be used to track the funding positions for the Firm overall and by individual external account. It is worth noting that these screens will also form the basis of further Modules of GCCM and should be able to incorporate more than just cash balances in the position screens and disbursement and receipts flows as users drill down.

The various screens will have a similar look and feel but will show different representations of the data in the D&R database with the following three basic views:

1. Currency Positions
2. Account Position Reporting
3. Account Activity Reporting

Depending on the users set-up they will open to one of above three default views and will have access to the accounts they are authorised for. This may range from one Internal Business account for a business user to all accounts for a Treasury user. As the layouts will be web delivered a user with access to more than one layout should be able to run them simultaneously through multiple web browsers.

Users should be free to select their own opening screens and the system should remember this for next time the user access the system. More specifically though users may have access to a large number of accounts they should be able to select sub-sets of accounts (almost as if favourites) that they can focus in on by creating their own version of the following three screens. This will be particularly useful in CCM, where the funding of a large number of external accounts is assigned to a particular group and then further allocated to members of the group but with the understanding that any one member of the group can cover for the others. Hence a particular user would have access to an entire range of accounts yet focus on a limited more manageable number.

It is for example expected that the Cash and Collateral Management would open to the Account Positions view with a default view showing all real world nostro accounts in the region of the user.

The screens should be enabled so that users can add in formula driven columns from a predefined list for major calculations and / or special functions or create their own simple calculations based on just addition or subtraction.

Note at the lowest level of drill down, that is transaction level reporting through a single account, each flow or transaction should represent what it is, that is whether it is a payment a funding movement or for later modules a DVP or Financing trade. To begin with this list of types will be probably limited to:

- PAY for an external payment / receipt
- FUND for the funding of a real world nostro
- INTPAY for an Internal payment / receipt
- PROJ for a projected figure
- REC for an entry created to clear a nostro REConciliation break



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Though it may be worthwhile considering further sub-divisions, for example source of request or margin posting, etc.

#### **4.3.9.1. Standard Views**

Though the on-line reporting should be flexible to allow users to define specific groupings of accounts and messages that they include in the views as laid out below, a series of preset unalterable set of views should also exist so that various users can consistently bring up the same set of data and therefore aggregated positions.

This is particularly important in Treasury where the Funding Desks and Cash Management will both be looking at account and balance information. This is because for the funding of external accounts, a difference in the resulting numbers due to the use of dissimilar parameters in the views could result in inaccurate funding of the Firm's positions and increased interest burn.

#### **4.3.9.2. Currency Position Reporting**

This layout will allow a user to view traffic by currency and the current funding position for that currency with drill down to the external accounts within a currency. It is expected that the Treasury Funding Desk would open to the Currency Positions view.

The screen should open to a menu bar and a list of currencies available to the users with the current date set as the value date for display. GCCM will need to net activity in its database to create an overall currency balance for all real world accounts of that particular currency except those that have been explicitly excluded.

##### **4.3.9.2.1. Excluded or Restricted Accounts**

Certain external accounts will or will have accrued cash balances over time that may not be available to the Firm for funding other activity within the Firm.

An example of such an external account would be an exchange margin account, where funds have been placed with the exchange to support initial and variation margin for open positions and to return funds from the margin account would cause the Firm to be under collateralised at the exchange.

These external accounts should then be excluded from the currency summary positions and segregated during the drill down to individual accounts to show the funds are not readily available.

##### **4.3.9.2.2. Suggested views**

The net balances of the items in cash terms should be displayed against each currency using book opening position and GSSR supplied balance as the starting points.

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During later modules the value of available collateral in a currency should appear alongside the free cash numbers that will be represented as a result of D&R activity.

Currency	Book Value Cash		Account Balance Cash	
	SOD Cash	Current Projected EOD Cash	SOD Cash	Current Projected EOD Cash
	SOD – Start of Day			
	EOD – End of Day			

By clicking on book value of an account balance the users should be able to drill down to show rolling balance information based on the criteria of book balances or real world account balances being used (note SOD on S would have been EOD on S-1).

Currency      Prior day      Current Day      Forward Day 1, etc

The prior day's end of day balances and the net balances for the next five days forward data activity should be shown to the left and right of the currently selected value date, as appropriate, to give a run of seven working days' balances alongside each other. The user should be able to amend which seven days' balances are shown.

The user should be able to double click on a date to split out by status the net of the items in each currency for the value date double clicked on. The total should move to the right.

Currency      Start of Day      Projection      Repair      Pending Settlement      Settled      Accounted for      Total

The user should be able to click on a currency to drill down to show the split for that currency by real world nostro (grouping because they are at same agent). Accounts with items that could effect the balance (E.g. pending cancellations) should be highlighted a different colour.

Currency  
Nostro group      Start of Day      Projection      Repair      Pending Settlement      Settled      Accounted for      Total

Items not yet assigned to an external nostro should be shown as a distinct line in the drill down. Restricted or exclude accounts could be represented as a specific nostro group.

If nostros are grouped, then the user should be able to click down again to bring up the individual nostro accounts.

Currency  
Nostro group  
Account Start of Day      Projection      Repair      Pending Settlement      Settled      Accounted for      Total

Once the individual nostro accounts are highlighted the user should be able to drill down to the individual items and drill into these as well.

#### 4.3.9.2.3. Example of Drilldown views for currency reporting

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Date		EAME Region									
14-Sep-04											
		Book		Book							
Ccy	Book SOQ Balance	Book SOQ Funding Required	Book SOQ Balance	Book SOQ Funding Required							
CHF	73,172.18	40,518.85	21,640,518.85	40,518.85							
CZK	135,205.88	135,205.88	135,205.88	135,205.88							
DKK	24,202.84	3,202.84	11,660,202.84	3,202.84							
EUR	28,661,394.36	704,583,776.50	844,134,758.49	704,583,776.50							
GBP	1275,809.49	86,112,492.00	291,755.27	86,112,492.00							
HUF	175,816.64	175,630.60	175,630.60	175,816.64							
ILS	4,750.29	88,085.85	88,085.85	88,085.85							
KWD	-	-	-	-							
LTL	-	-	-	-							
LYL	-	-	-	-							
NOK	37,640.71	8,142.45	5,105,887.55	8,142.45							
NZD	-	-	-	-							
PLN	855,700.37	15,670.70	15,670.70	15,670.70							
RUB	-	-	-	-							
SEK	17,758.34	1,253,617.52	111,075,840.49	1,253,617.52							
TRY	-	-	26,852,605,585,090.90	-							
USD	50,541,318.83	524,305,392.50	505,350.50	524,305,392.50							
14-Sep-04											
Currency	Account Ref	Start of Day	Projection	Requir	Pending Settlement	Settled	Accounted for	Total			
GBP	HSCB Import	291,755.27	1,427,930.57	10,575,120.00	125,635,120.00	87,063,074.35	40,000,000	245,446,904.39			
	HSCB MAIN	15,800.50	2,500,000.00	174,591,230.00	125,635,120.00	100,000,000.00	7,634,302	153,276,412.00			
14-Sep-04											
Ccy	Date	Originator	BOOKING	Source Trade ID	Reai	Confirmed In	Confirmed Out	Status			
PAY		RISC - FK Acct 12345	1234567	31242	Goldman Sachs	1978316		0 NEW			
PAY		ITS - PB Acct 98764	456789	10774380	CGI	2552.35		0 NEW			

#### 4.3.9.2.4. Euro-in currency reporting

Note if applicable the user should be able to double click on Euros to split out by status the net of the items in each Euro-In currency and Euros for the value date shown.

## EURO Breakdown

In Currency 1	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total
In Currency 2	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total
EUR	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total

The user should then be able to drill down again to see the underlying transactions as above, but the system should show the original currency amounts rather than the Euro equivalent.

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#### 4.3.9.3. Account Position Reporting

To allow a user to view the net balance and traffic through a class of Accounts, with the flexibility to filter to a specific grouping

The screen should open to a menu bar and a list of account type groupings (intercompany account, nostros etc) available to the users with the current date set as the value date for display. GCCM will need to net activity in its database to create a running balance by account group. The account group the user opens to will be set by them and should be flexible enough to be reset easily and allow ranges such as all accounts, general groups such as LBI Real World Nostro or even specific individual accounts such as LBI's intercompany accounts in GCCM with LBHI.

The net balances of the items in cash terms should be displayed against each account grouping by currency. The user should also have the ability to request a USD equivalent number alongside the currency total. The prior day's end of day balances and the net balances for the next day should be shown to the left and right of the currently selected value date, as appropriate, to give a run of three working days' balances alongside each other. The user should be able to amend which days' balances are shown.

Account Grouping	Currency	Prior day	Current Day	Forward Day 1
------------------	----------	-----------	-------------	---------------

The user should be able to double click on a date to split out by status the net of the items in each currency by the status for the value date double clicked on. The total should move to the right.

Account Grouping	Currency	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total
------------------	----------	--------------	------------	--------	--------------------	---------	---------------	-------

Items not yet assigned to an external nostro should be shown as a distinct line in the drill down.

The user should be able to click on an account grouping to drill down to show the split for that each account. Accounts with items that could effect the balance (E.g. pending cancellations) should be highlighted a different colour.

Account group								
Account	Currency	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total

The user should be able to filter by currency.

Account group								
Currency								
Account	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total	

Once the individual accounts are highlighted the user should be able to drill down to the individual items and drill into these as well.

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#### 4.3.9.4. Account Activity Reporting

This section outlines how to allow a user to view traffic through the Internal Business Accounts within their grouping by logging onto Lehman Live. It is for example expected that the Operations and Business Users would open to the Account Activity screen view.

The screen should open to a menu bar and a list of accounts available to the users with the current date set as the value date for display. Accounts with items pending repair should be highlighted a different colour to currently 'clean' accounts.

The user should be able to click on an account to drill down to the activity passing through that account for the selected value date. A status mark should be shown alongside the individual items and again items pending repair should be highlighted a different colour.

Accounts should be laid out along the lines of:

<i>Account Number by EOD</i>	<i>Account Title</i>	<i>CCY</i>	<i>Cumulative Historical Funding (SOD Balance)</i>	<i>Current Days Funding</i>	<i>Net Funding</i>
----------------------------------	----------------------	------------	--	-----------------------------	--------------------

The user should be able to drill down on an account to view the activity that has created the current balance:

<i>Account</i>	<i>GCCM Ref</i>	<i>Source Ref</i>	<i>Beni</i>	<i>CCY</i>	<i>Amount</i>	<i>Value Date</i>	<i>Status</i>
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#### 4.3.9.5. Functions Available in Reporting Menu

This section outlines the functions that a user could have access to from the on-line reporting screens.

By default all users should be allowed to change the view through which they see the data for the accounts they have access to and they should be able to click on an account to drill down to the activity passing through that account for the selected value date. A status mark should be shown alongside the individual items and again items pending repair should be highlighted a different colour.

In turn all users should be able to click on an item to bring up on screen. The screen should show the current status and version of the request in full, potentially over a number of pages within the screen. If an item has been confirmed, the record should show the relevant payment references and a copy of the outgoing and incoming messages if appropriate. If the user selected item is awaiting repair and the user has the requisite rights, they should have the option to transfer the message to a repair queue / request edit rights to the message and so be transferred to the amendment and approval page with the item.

The user should also have access to the following functions depending on the user rights once they have highlighted a record:

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4.3.9.5.1. Cancel or confirm / reject cancellation of a record;

Cancelling an item should cause it to go into a pending cancellation confirmation status and all activity in GCCM on this record should pause. *This should update the status of the item particularly for funding purposes.*

- If the cancellation of an item is rejected, processing should continue as normal.
- If the cancellation of an internal request is confirmed, it should be immediately reversed.
- If the cancellation of an external request is confirmed and the external message has not been sent then any external message should be cancelled. Funds should reverse out of balance reporting and accounting with next available funding value date for the currency – this may require user intervention from CM to confirm reversal date.

This means that it is possible that an item cancelled before its message goes out will need to generate accounting for the expected settlement value date with a reversal booked for the next funding value date. (Interest accruals on the funding would continue until reversal processed.) These two dates could be the same or not.

- If the cancellation of an external request is confirmed and the external message has been sent then

For incoming money, the booking should reverse out of balance reporting and accounting with next available funding value date for the currency – this may require user intervention from Cash Management to confirm reversal date. (Interest accruals on the funding would continue until reversal processed.)

For payments, the booking should be flagged with the requirement that a cancellation message will need to be sent. The sending of the cancellation message should be noted on the trade (this info should be passed to GSSR). Nothing else occurs at this point. Once funds are returned an offsetting item with the value date of the receipt can be passed by the appropriate Reconciliation team.

GCCM D&R should if possible generate and send the cancellation message.

4.3.9.5.2. Amend or confirm / reject amendment of a record;

Requesting access to amend a record should cause it to go into a pending amendment status and all activity in GCCM on this record should pause.

Normal users should have access to amend SSIs only on external requests. These changes will need to be approved by the appropriate number of users for the internal Business Account.

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For other fields the users should normally cancel and rebook. If an incorrect internal Business account has been quoted the user can pass an internal movement for the correct internal Business Account to credit the incorrect account or cancel the request and rebook.

- CM users should have access to all fields including amend SSIs, value dates and amount. It is their responsibility to ensure changes can be funded for. Should the amendment include back-valuation, the back value process should be followed for accounting and when the message is generated.
  - For internal requests value and amount fields can be amended, Beneficiary account should not be amended. To amend a Beneficiary the users should cancel and rebook.
- If the amendment of an item is rejected, processing should continue.
- If the amendment of an internal request is confirmed, the original booking should be reversed and the amendment passed
- If the amendment of an external request is confirmed and the external message has not been sent then any external message should be cancelled. The external message should then regenerate with amended SSIs.
- If the amendment of an external request is confirmed and the external message has been sent then

For incoming money, the booking should update details on the record but do not generate a new message. Intraday Reconciliation and Accounting should then proceed as appropriate for the external nostro in use.

For payments, the booking should be flagged with the requirement that an amendment message will need to be sent. The sending of the amendment message should be noted on the trade (this info should be passed to GSSR). Intraday Reconciliation and Accounting should then proceed as appropriate for the external nostro in use.

GCCM D&R should if possible generate and send the cancellation message.

#### 4.3.9.5.3. Raise a query on an item.

Users should be free to raise queries on entries to their Business accounts that they don't understand or recognise. From within the transaction, D&R should allow users to raise a request that auto create an email about the currently selected item from the user's MS Outlook email account. Basic details of the item should be appended to the email with the user free to insert additional text.

The query should be sent either to originator / amender of a request if known, a nominated group for the originator / amender of a request or a general group such as Cash Management or Firm Balancing; where originator could be an individual if manually input or a user group for a system fed item.

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#### 4.3.9.5.4. Search Facilities

Within either the summary or detailed screens, the user should be able to select another value date and refresh the screen to bring up the account history for that value date. Once in an account the user should be able to bring up multiple value days, in date order, on one screen. The user will be restricted at this point to the data stored in the production database.

The user should also be able to conduct a search for a request or receipt across any or one of the select number of the accounts he has access to, based on the minimum criteria possible. Finally users should also be able to search for records created, authorised, etc. by a particular user or source system across accounts.

For trend or longer term investigations the users should be directed out of the production database to the archive or reporting database.

#### 4.3.9.5.5. Initiate Auto-Funding Process – detailed in Section 4.3.8.2

### 4.3.9.6. Effect of Back Valued Requests

D&R is designed to allow back valued items to be sent for processing. For internal requests back-valuations will be processed as if they had occurred at the time. External requests will be processed on a best efforts basis and any external costs to complete the back valuation will be passed back to the originator of the requests.

For account reporting back-valuation requests will be used to restate the end of day and subsequent start of days for internal accounts (e.g. originator of request and beneficiary of internal only movement) but for external accounts will be shown as an adjusted / back-valued figure in the next available funding day.

#### 4.3.9.6.1. Internal accounts

Specifically D&R will insert item into the nearest date live in system for the requested valued date. So as the live D&R database will maintain five value days prior to current value date in line with DBS, a back valued item less than five days old would be inserted into cash-flows for the relevant date. The balances for the subsequent end of day and start of day balances should then be restated up to the current value date.

For items older than five days these should be inserted into cash-flow for the oldest date on the live system. The balances for the subsequent end of day and start of day balances should then be restated up to the current value date.

To allow for this split D&R should record value date of item (for interest purposes), date posted (date shown in cash-flow) and the requested or effective date of the item. Note for an item submitted today for a currency where today was still a valid funding day then all three dates would record today's date.



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#### 4.3.9.6.2. External accounts

To ensure the external accounts can be correctly funded, back-valued external payments should be shown in the current funding days cash-flows as a new item annotated with requested value date; that is start and end of day balances for interim days should not get restated and the back-valued item is only reflected in current day and going forward for reporting purposes.

Note D&R should request authorisation for any bank charges for back-valuing the request from the business so that these can subsequently be attributed to business once debited.

#### 4.3.9.6.3. Example

For example assume today is Monday August 2<sup>nd</sup> and a payment is sent for value Thursday July 29<sup>th</sup> across an External Account.

- GCCM End of Day balance for 29<sup>th</sup> is not updated on screen.
- Start & End of Day balances for 30<sup>th</sup> are not updated on screen.
- Start of Day balance for 2<sup>nd</sup> is not updated on screen.
- Payment is inserted into cash-flows 2<sup>nd</sup>, with annotation that an item is back valued.
- Payment is sent with value today.
- Authorisation of back-valuation charges is requested from originator / group
- Amendment is sent to bank requesting value date change

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#### **4.3.10. Process Name: Funding Accounts – Ref 1.3.2.2**

To create a process to allow the funding of the Firm's real world nostros accounts and to use this process to create a way for the system itself to by propose movements to fund individual or ranges of real world nostros accounts. The system should allow manual funding of nostro accounts as well as the automatic funding of nostro accounts.

##### **4.3.10.1. Manual Funding**

A Cash Management user of GCCM should be able to easily see and calculate the amount of cash a real world nostro requires to support the payment activity or would be long following receipts at a given point in the day by reviewing the current and pending items for that nostro account in GCCM. The user should then be able to input a FUND item into GCCM to flatten the nostro account.

The FUND item will be a real world movement between two Lehman external accounts that are on GCCM; cash must move and in this the booking differs from other entries where the beneficiary account is a Lehman account where the default would be accounting journals only.

The Cash Management (CM) user would create the FUND request either via the web page input screen or from within GCCM by first identifying the external account the FUND item should happen against and then requesting a FUND movement.

If the CM user creates the FUND request via the web-site the CM user should ensure that at least the pay and preferable both sides of the required movement are entered. If the CM user creates the request via the GCCM functionality, then the request should come up with amount and value date blank for input by the CM user. This is to allow for intraday funding of an external account where cash may be moved to and from an external account independent of the current actual or projected balance on the account.

The CM user should be able to request the payment of the inputted amount of funds into the external account or to pay the funds from the account. Once the user confirms the FUND request amount, GCCM should identify the external account that the FUND movement will go to / come from for long / short positions respectively. It will do this by ascertaining the Paying (if it exists) or Funding entity for the legal entity the external account being funded resides in and append the settlement details of the real world nostro for the identified entity. If the Paying or Funding entity has multiple real world nostros the nominated default should be chosen.

The CM user should then be offered the opportunity at this point to override the chosen nostro account for any other real world nostro. This is to allow activity to be moved directly between accounts to reduce or net cash flows before funds are transferred back up to main nostro accounts. (For example this may be used to reduce intraday impact of large cash flows when securities have been bought into one depot, moved free to a second, out of where the securities are secured financed and the funds in the second are required in the first.)

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A second CM user should then be required to review and approve the request before the item can be processed any further. At the point of approval a request for the opposite entry (i.e. a pay for a receipt and a receipt for a pay) should be created against the opposing external account in an approved state.

Note when the accounting for the FUND entry is created, the journals should reflect the actual cash movement via any the appropriate funding intercompany accounts rather than assume the default account was chosen.

Both requests should populate the Pending Release numbers for the appropriate external accounts.

#### **4.3.10.2. Automatic Sweep facility**

To speed the process of funding multiple external accounts (real world accounts now total 3000+ and it is labour intensive to manage this amount of accounts) GCCM should have an auto sweep process that can create FUND items.

External accounts may have a target balance and a minimum activity balance both for long and short activity. Where these numbers have been set the system should allow for these when creating the automatic funding numbers. These are expected to work as follows:

- Minimum Short balance – a short balance that is not cost effective to cover for a particular external account (for example a payment would cost USD2 and the balance is only –USD2). If the balance is less than the minimum do not create the FUND item. If the amount is greater (i.e. shorter) then create a item to fund the external account to zero (or the target balance if set).
- Minimum Long balance – a long balance that is not cost effective to cover for a particular external account (similar to above example a long balance of USD2 would not be cost effective to cover). If the balance is less than the minimum do not create the FUND item. If the amount is greater (i.e. longer) then create a item to fund the external account to zero (or the target balance if set).
- Target Balance – a long balance that the external account should be funded to other than zero; expected to be used for minimum reserve requirements. If the balance is less or more than the target fund the external account to the target balance by paying funds from the account if the balance exceeds the target and by paying funds into the account if balance is below the target.

##### **4.3.10.2.1. Excluded or Restricted Accounts**

Certain external accounts will have accrued cash balances over time that may not be available to the Firm for funding other activity within the Firm.

An example of such an external account would be an exchange margin account, where funds have been placed with the exchange to support initial and variation margin for open positions and to return funds from the account would cause the Firm to be under collateralised at the exchange.

These external accounts should then be excluded from the automated funding process.

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#### 4.3.10.2.2. Suggested Process

A CM user should be able to highlight a single, range, group or all external accounts and run the auto sweep function. Note it should be possible to run the process multiple times on a single external account in a working day.

A group could reflect a set of external accounts at an agent that have been set-up to be funded under a netting agreement with the agent. In this case the Fund process would be based on the net balance of all the external accounts in the group and create a single movement rather than a movement per account.

The auto sweep function should then create a series of FUND entries, one per selected external account or group, with the next available payment day given the current time of day for the currency of the external account. As these entries are automatically created the SSIs should default to the Paying (if it exists) or Funding entity for the legal entity of the selected external accounts.

The amount to be funded should also be automatically added and should be the net balance of all items projection or pending still in the system for the given value plus the GSSR supplied start of day balance (or ledger start of day balance, if this option has been selected as part of the account set-up) or the projected SOD balance for forward value date movements.

There should be no override function for either SSIs or amount and the user should be limited to accepting, copying to a manual request or cancelling each proposed FUND entry; with copying effectively the cancelling of the auto record and the creation of a manual FUND item where the amount can be amended.

Once approved each FUND entry should as above create its opposite and insert both flows into the appropriate account numbers and release queues.

#### 4.3.10.3. Impact on Currency Funding

Though this is the correct way to process these FUND entries, because two opposing entries are created per movement, from a currency funding perspective the total net currency position has not changed. Therefore the CM user needs to ensure that the requirement they are funding for is represented in GCCM in some form.

This requirement is easily fulfilled when an account is being funded to cover payments or receipts already in or due to go into GCCM (as their entry adjusts the total currency requirement appropriately), it may not be so easy for the funding of securities depot activity.

##### 4.3.10.3.1. Use of Projection Process – Ref 1.3.2.3

For external depot accounts the underlying funding requirement is unlikely to show in GCCM automatically as DVP trades are not acknowledged by MT900 or MT910s that could be used to create the requirement. Thus for external accounts where the requirement is not automatically input at the

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implementation of GCCM, the CM user must ensure that the appropriate funding number is input into the system.

Therefore the user or the system will need to create a projected requirement in the account that reflects activity that is either yet to be entered into the system or resides outside the system. For the securities depots Module 2 of GCCM should negate the need to undertake this process. Projected requests should be either:

- Manually input into the system using the Projection number facility offered by the web-input process. Note the web-input process should allow these funding (projection) numbers to be loaded into GCCM via the file load process or as individual projection amounts.
- Lifted automatically in aggregate from either the various settlements systems generating the underlying securities traffic for a depot or from an external source.

#### 4.3.10.3.2. Projection Clean-up Process – Ref 1.3.2.4

While external accounts are funded against a projected or manual input it will assist CM users if there is a semi-automated process to update or amend the numbers as further activity is booked creating additional or reduce requirements.

For example on the day prior to settlement, S-1, the securities account may show a requirement to be funded to cover purchases of USD1 billion that is reduced on settlement date as a result of same day financing by one of the CFU or EFG desks. In this case the CM user would have input a requirement of USD1bn on S-1 for S and then updated the requirement on S through the day to provide the Treasury Funding Desk and the automated funding process with a correct currency requirement for the external account and overall position.

This process could either be a forced revalidation of the projection figures at certain points during the day, e.g. half an hour before the normal funding deadline for a currency, the ability to upload amendments to numbers via the web-front end without having to cancel and rebook or a more general clean-up process that removes all projection figures for yet to be funded positions at the start of each day, so users have to re-input.

#### 4.3.10.3.3. Next Day Balance

Where balances have been funded on a projection number – for example a securities account – there will be a difference between the ledger balance excluding the projection number and the actual balance.

Thus there is an open question of how to correctly track the ongoing account balances for these external accounts without creating a separate process to store the projection numbers day on day and then to incorporate this number into the running balances as the true ledger balance will be the combination of the ledger balance in the settlement system and the ledger balance in GCCM. Where the ledger balance in the settlement system represents the book value of the cash settlement of the securities flow and the ledger balance in GCCM represents the book value of the funding of the account.

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In reality though as these accounts are funded to against actual balances (i.e. real world balances) the functionality in the system to define whether the account should be funded to the book or real world balance should allow the funding process to continue. With the users selecting that depot accounts are always funded versus the real world balance either actual or calculated from the advised start of day, booked flow and projection figures. And the ledger balance will simply deviate from the real world balance.

Hence given the split ledger representation of the activity the reporting of particular system breaks for example where the ledger balance and real world balance differ by more than the known unpreadvised, depot balances would be excluded automatically.

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#### **4.3.11. Incoming Bank Confirmations for Matching and Applying Funds – Ref 1.4.1**

Up to this point both requests for payments and notifications of receipts are handled in the same way for all currencies. In this matching process however, there will be two different processing models which will specifically address the handling of Accounting.

Under the Simple Process accounting entries will be generated regardless of whether there is a confirmation from the bank for a payment or an acknowledgement of a credit for any pre-advice. For accounts selected to run via the Complex process, accounting entries will be generated only if there is a confirmation from the bank of a payment or a credit that can be applied to an Internal Business account or similar.

In order to determine which processing model will be followed, the setup will be determined at the currency level with an override at the individual GCCM account level, as part of the Account Table.

##### **4.3.11.1. Controlling the Generation of Accounting Records**

Both models rely on the same basic matching engine, it is just that under the Simple process all real world requests can be accounted for at the close of the settlement day and under the Complex process accounting can be restricted to only acknowledged payments and applied credits.

###### **4.3.11.1.1. The Simple Process**

In this model any incoming acknowledgements will be used but will not hold up the accounting of individual entries. And it is assumed that requests are funded pending settlement regardless of fails.

This model is likely to be used for currencies which do not currently have the same day liquidity to allow the funding of fails and accounts where incoming acknowledgements are unavailable or unreliable.

During the defined business day for the specific currency of an external account, entries should be matched if a notification arrives. Once matched, the status of the request will change to matched and the item should be accounted for.

A list of notifications of unpre-adviced items will be available to the user to review if required. Unapplied debits and receipts can be passed to Suspense if required.

At the end of the defined business day for the specific currency of an external account, requests that have not been matched should be accounted for. Unapplied items should remain on the nostro.

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#### 4.3.11.1.2. The Complex Process

In this model any incoming acknowledgements will be used and the accounting will be dependent on the acknowledgment being received either in GCCM or by a CCM user manually acknowledging the item. And it is assumed that requests are funded pending settlement but fails can be funded for.

This model is likely to be used for currencies which have the same day liquidity to allow the funding of fails and nostro accounts where incoming acknowledgements are available and reliable.

During the defined business day for the specific currency of an external account, entries should be matched if a notification arrives. Once matched, the status of the request will change and the item should be accounted for.

A CCM user should have the ability to put an item into a matched status overriding the lack of external notification. Two options should be available to the CM user, these are:

- Option A) Confirm item to source systems and create accounting.
- Option B) Confirm item to source systems but do not create accounting, instead put item on hold. The item should remain open until an electronic confirmation arrives or the CM user updates the status to option A above, say next day, at which point the accounting should be created in GCCM as per normal.

Option B will create a reconciliation break for the owner of the Internal Business Account if they create their accounting either as a result of the confirmation or in advance of the confirmation.

A list of notifications of unpreadvised items will be available to the user to review from which it will be possible to be able to create bookings back to an Internal Business account. Unapplied debits and receipts can be passed to Suspense if required.

At the end of the defined business day (could be shorter than real world account opening) for the specific currency of an external account, requests (*Open Question treat payments and receipts the same?*) that have not been matched should be reversed out (by rejecting request) of the real world nostro, associated funding numbers and the originating internal Business Account (*Open Question reverse or propose reversal for CCM approval so that items can investigated first?*) and notification sent to the originating system that this is the case.

#### 4.3.11.1.3. Handling of Bulk, Split or Unapplied Items

- 1) Bulk items should be accounted for if the notification of the net movement has been received.



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Individual Payments							
Ref Id	Bank	Bank Account	debit/credit	Amount	Currency	Value Date	
001A	Chase	12334	debit	100000	USD	July 21, 2004	
033B	Chase	12334	credit	74000	USD	July 21, 2004	
0446Q	Citibank	678909	debit	250000	USD	July 21, 2004	
555J	Citibank	678910	debit	300000	USD	July 21, 2004	
0546Q	Citibank	678909	debit	550000	USD	July 21, 2004	

Bulked							
database							
Ref Id	Bank	Bank Account	debit/credit	Amount	Currency	Value Date	Net ID
001A	Chase	12334	debit	100000	USD	July 21, 2004	AA11
033B	Chase	12334	credit	74000	USD	July 21, 2004	AA11
0446Q	Citibank	678909	debit	250000	USD	July 21, 2004	AB22
555J	Citibank	678910	debit	300000	USD	July 21, 2004	
0546Q	Citibank	678909	debit	550000	USD	July 21, 2004	AB22

bulk items to be sent							
MT 202	Chase	12334		-16000	USD	July 21, 2004	AA11
MT 202	Citibank	678909		-800000	USD	July 21, 2004	AB22

Matching								
database								
Ref Id	Bank	Bank Account	debit/credit	Amount	Currency	Value Date	Net ID	Match Seq
001A	Chase	12334	debit	100000	USD	July 21, 2004	AA11	1
033B	Chase	12334	credit	74000	USD	July 21, 2004	AA11	1
0446Q	Citibank	678909	debit	250000	USD	July 21, 2004	AB22	1
555J	Citibank	678910	debit	300000	USD	July 21, 2004		1
0546Q	Citibank	678909	debit	550000	USD	July 21, 2004	AB22	1

bulk items sent								
MT 202	Chase	12334		-16000	USD	July 21, 2004	AA11	
MT 202	Citibank	678909		-800000	USD	July 21, 2004	AB22	

confirmation of payment								
MT 900	Chase	\$16,000.00	12334	July 21, 2004	USD			
MT 900	Citibank	\$800,000.00	678909	July 21, 2004	USD			
MT 900	Citibank	\$300,000.00	678910	July 21, 2004	USD			

note bank, RW number, amount and currency name

2) For split items the portion of the item that has matched should be accounted for.

Initial Payment									
database									
Bank	bank account	debit/cred	Amount	CCY	Value Date	Ref ID	Split ref id	Urgency	Split Amount
Chase	12345	debit	\$1,000,000,000.00	USD	July 17, 2004	001F	S1001F S2001F S3001F	Y	\$250,000,000.00 \$250,000,000.00 \$300,000,000.00

split									
Chase; account 12345		\$1,000,000,000.00	To Generate Payments						
			\$250,000,000.00	S1001F	<input checked="" type="checkbox"/>	Check Box 4			
			\$250,000,000.00	S2001F	<input checked="" type="checkbox"/>	Check Box 5			
			\$300,000,000.00	S3001F	<input checked="" type="checkbox"/>	Check Box 6			
			Residual	\$200,000,000.00					

payment sent									
MT 202	Chase	12345	-250000000	USD	July 17, 2004	S1001F			
MT 202	Chase	12345	-250000000	USD	July 17, 2004	S2001F			
MT 202	Chase	12345	-300000000	USD	July 17, 2004	S3001F			

match											
database											
Bank	bank account	debit/cred	Amount	CCY	Value Date	Ref ID	Split ref id	Urgency	Split Amount	Match Id	Match Seq
Chase	12345	debit	\$1,000,000,000.00	USD	July 17, 2004	001F	S1001F S2001F S3001F	Y	\$250,000,000.00 \$250,000,000.00 \$300,000,000.00	MS1001F MS2001F MS3001F	1 1 1
MT900	Chase	12345	250000000	USD	July 17, 2004	S1001F		MS1001F			
MT900	Chase	12345	250000000	USD	July 17, 2004	S2001F		MS2001F			
MT900	Chase	12345	300000000	USD	July 17, 2004	S3001F		MS3001F			

assumptions made such as split ref id sent and received back from banks

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Note the residual 200mm should also generate a payment for release, this is not shown in the example for clarity.

3) Any items not applied or reversed on value date become reconciliation breaks to be investigated after value date.

#### **4.3.11.2. Basic Matching Engine**

The engine will take in confirmations received from external banks / sources and attempt to match these against requests already in the system. Items that are not matched will be placed into an unapplied queue and will be available for review during the day.

As part of the processing of confirmations, GCCM will store the step in the auto-match process which a match was found for a particular confirmation and the number of criteria an item matched on for the manual match process. This is required for MIS purposes and to produce the successful matches.

Note that each incoming notification should be segregated by the external account it is confirming activity for and the matching engine should only allow requests and notifications to be matched if both items are for activity through for the same real world nostro account.

For items that were netted, the matching has to be performed against the netted amount and for split items, partial matching needs to be accommodated.

##### **4.3.11.2.1. Auto-Matching Rules**

Incoming notifications should be passed through the auto-matching process to see if they can be matched to request already in the system; a confirmation of a payment (debit) has to be processed to match to the GCCM outgoing payments and any confirmation of credits would be matched to any pre-advice received by GCCM. In addition details of the notification should be stored with the item it was matched against.

There will be a limited number of matching sequences in which confirmations can be auto-matched against a GCCM record. If the confirmation is not auto-matched, it will then default to an unapplied queue for manual matching. Unmatched requests in the system should remain in the 'current' status, e.g. released, until matched.

If a debit or credit notification is received and no request has been sent by GCCM, then GCCM should put the items in an Unapplied queue for the account quoting remitters reference.

If a debit or credit notification is received and a request has been sent by GCCM, then they should be processed using the following matching steps. Fundamentally, payments should match with a confirmation of payment and receipts with a confirmation of receipt with amounts matching up.

As mentioned previously, as part of the external account static table, there will provisions for:

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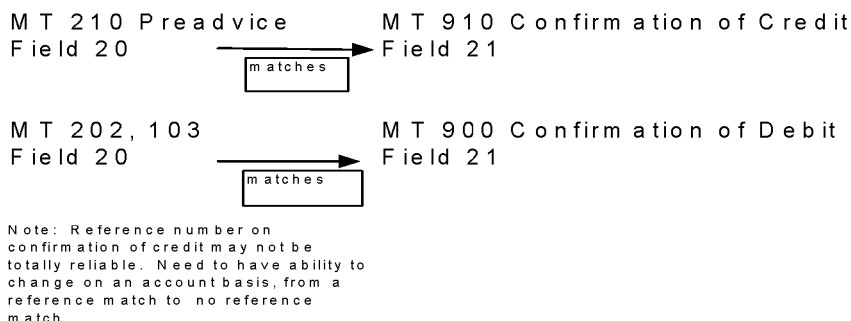
- Identifying whether the simple or complex process will be used to override the currency setup. It was mentioned that the accounting method will be identified at the currency level but an override would exist at an account level.
- Identifying the substring of characters to match on as required for Partial Matching and to provide the flexibility to change the strings of characters. This will be refined over time.
- Identifying whether to use reference matching or not. It is a known problem that banks may not provide the correct reference number so this would provide flexibility to change for example from Reference Match to a Partial Match.

We have an issue with the banks incorrectly matching items which may mean that we can't use reference matching for incoming funds. Therefore we will need a way to switch off options / reduce matching functionality by account and for payments and receipts independently without effecting whole principle of automated matching (e.g. tick box of rules to be used).

Once an item is matched, that specific item should not be available for matching again in case subsequent credits come in.

4.3.11.2.1.1. Match Sequence 1 - Reference Match

- Real world nostro account is same
- Check reference numbers supplied on notification against references quoted on outgoing messages. For SWIFT messages, the matching of reference numbers will be :



Field 21 is related reference so Field 21 should match with Field 20 of original request. Field 20s will not necessarily match with each other and Field 21s will not necessarily match with each other

- Check amount and currency
- If there is a match, then the update the status of the item in GCCM. Most payments should match under reference matching.
- If there is no match, then proceed to 2.

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#### 4.3.11.2.1.2. Match Sequence 2 – Partial Reference Match

- Real world nostro account is same
- Check limited / partial reference numbers supplied on notification (same as above) against references quoted on outgoing messages. (For TWS trades this could be last six alphanumeric characters of the transaction reference number.) Note GCCM D&R will need some way to generate the reference masking to extract the partial match by account. This will be refined as we progress.)
- Check amount and currency
- If there is a match, then the update the status of the item in GCCM.

If two or more ‘outstanding’ GCCM requests exist for a partial ref match for the same amount and it is impossible to match an incoming notification to one of them, then place the items in the unapplied queue.

#### 4.3.11.3. Unmatching items.

Users should have the ability to unmatch an item. If an item is unmatched any processed accounting should be reversed and the item placed in an unapplied queue.

#### 4.3.11.4. Unapplied Queue - Manual Matching

If no match is found automatically, then GCCM should let the user match up items manually. GCCM should allow the user to select an item in the unapplied queue and should propose matches based on the rules above (the matching sequences).

A screen with GCCM is needed to perform the manual matching.

Data to be shown on the screen relating to each of the notifications and payments/pre-advice:

Real World Nostro Account	
Name of Bank	
Amount	
Currency	
Customer Name	
Customer Account	
Unique Ref id	
Message Type	MT 103, MT 210 etc
BIC code	

Suggested options on the screen are as follows:

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To view potential matches ( sequence 4)	Clicks	To Perform Matches To Apply funds	Provide list of the Matching Sequences Available Provide space for user to input parameters to match : bs entity, exact amount, amount tolerance, name of bank, bank account number, BIC code
To view all unmatches			
To unmatch			
To apply funds			

Potential matches - all items with matching sequence of 4 should be displayed.	User will highlight items	User to Click on Match button
		User to Click Unmatch button

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To View Unmatches		
Bank Credits	User will highlight items	User to Click on Match button
GCCM preadvices		
Bank Debits		
GCCM Payments		

If one item is selected, provide dropdown menu of the matching sequences or the parameters. Once entered, bring up all the others meeting criteria. For example, a bank credit select and parameter of bank account entered, then GCCM preadvices with same bank account should be displayed. User select the GCCM preadvices, then click Match

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To Unmatch		
Bank Credits	User to highlight items	User to click Unmatch button
GCCM preadvices		
Bank Debits		
GCCM Payments		

- If the user feels there is a match in the proposed list, they should be free to select the item and match it.
- If not the user should be able to widen the search parameters to bring up other potential matches. If the user then finds one or more items that match the outstanding entry, they should be free to select it / them and match.
- Once an item is in a matched status, it should then be processed as if auto-matched.

#### 4.3.11.4.1. Proposed Matching - Amount, Value, Currency and Remitter/Ordering Institution

When a user selects either a GCCM request record(s) or a confirmation(s) from the bank; GCCM should generate a list of potential matching items from the same real world nostro account.

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To do this GCCM D&R should compare the selected item with all the other records for the same account that are unmatched or unapplied at that point. For each of the items GCCM D&R should note the number of matching criteria it finds for the pair of items.

The list of proposed matches should then be generated by showing each item with at least three matching criteria in descending order of number of matches (i.e. from seven to three). Users should be able to easily expand list by decrease matching criteria cut-off from three to two, one or zero (in which case all items would be shown).

- For Payments / Confirmations of debits check the following details against the information contained in the unmatched or unapplied records (each match counts as one matched criteria):
  - Real world nostro
  - Confirmation of Debit / Payment as appropriate
  - Amount
  - Value
  - Currency
  - Originator of request (e.g. Lehman's sending BIC matches)
  - Beneficiary details if available
- For Receipts / Confirmations of Credit check the following details against the information contained in the unmatched or unapplied records (each match counts as one matched criteria):
  - Real world nostro
  - Amount
  - Confirmation of Credit / Receipt as appropriate
  - Value
  - Currency
  - Originator of Payment (e.g. GS or Citibank)
  - Beneficiary details if available

Note the check may need to be against interbank settled amount (i.e. prior to charges) and for incoming credits the originator quoted should be checked against either ordering customer or bank. (We are dependent on information supplied to ourselves.) Where charges have been debited GCCM D&R should allow automatic journaling of the charge as a fee expense.

#### **4.3.11.5. Matching Status and Accounting**

Outgoing activity that has been released to agent banks should be tracked and compared with incoming notifications. When a notification has been 'matched' against a GCCM request, the status of the request in GCCM should be updated.

The status of the request in GCCM should update as settled for the matched notification. A status update should then be sent to the Originating Source system of the request with the appropriate status.

If the notification indicates that the item has settled, then GCCM should process the accounting associated with the funding and settlement of the request.

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GCCM	User Action	Validation	Pass/Fail	System Action	Internal System Status	Published Status Comment
Matching *see below for preadvices				<i>Every item will be unmatched</i>	Unmatched	
		Auto Match	Pass	Process Accounting, associated funding and settlement or request. Send status message back to originator	Automatched	Settled
			Fail	Send to Unapplied Queue		Unmatched
	Manual Match		Pass	Process Accounting, associated funding and settlement or request. Send status message back to originator	Manual match	Settled
			Fail	Send to Unapplied Queue		Unmatched
	If previously matched, and then unmatched			Reverse any accounting and place in pending queue.		Unmatched
Manual create of records for unapplied items	Applied/Unapplied Funds user selects items to create GCCM records  User then input required info		Pass	Process accounting for the control account, suspense. Send 'Settled message back to originator'	Manual created entries	Settled

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#### **4.3.12. Unapplied Items – Ref 1.4.2**

If a notification has been received of items that have not been requested or preadvised (fee charges or unpreadvised funds), a user should be able to select the items and create entries to apply the funds in GCCM. This would be similar to the current FPS process for users and R&D to claim unapplied funds

As part of the entry creation process the user should be asked for the internal Business or Control Account that an item should be passed to and the value date (default today). This internal account number should be validated and then a record created in the real world nostro and the internal account to represent the entry. Note the internal account chosen by the user will vary depending on the item and could be an Internal Business account for an unapplied credit or a fee / interest account for a unapplied debit for example.

The status of the item should reflect as matched and it should then be processed as if auto-matched (as shown above in the “Manual Create of records for Unapplied items” row).

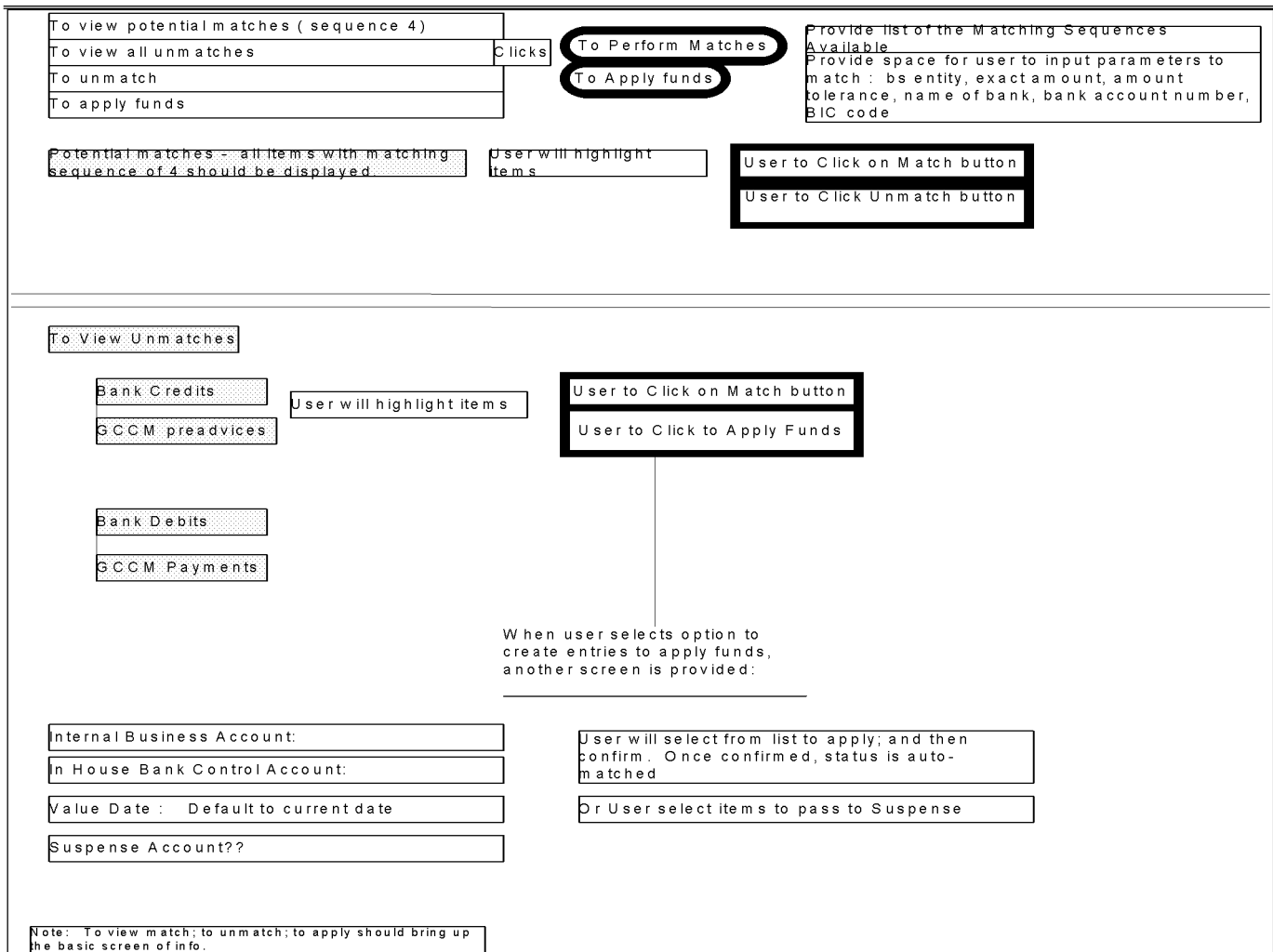
The user should be free to select individual or a list of items to apply. For multiple records the user should be presented with the option of applying all the selected records with the same value date and to the same internal account or to confirm the internal account number and value date for each record. (The ability to amend value date from the current funding day should be limited to CCM and regardless of users be no earlier than the date of the unapplied item.)

It is understood that the regions currently manage the investigation of unapplied items differently and so the control process for the investigation of items will be driven by the users. To permit this GCCM should allow the auto posting of items to suspense where this function has been selected.



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#### 4.3.12.1. Suspense

As above, the user should be free to select individual or a list of unapplied confirmations of debit / credit items to apply, including having the ability to apply the posting to a suspense account for further investigation. The suspense account should default to the main suspense account defined for the entity that owns the real world nostro account, though where more than one suspense account exists for the entity that owns the real world nostro account users should be able to override the default suspense account to one of the others owned by the entity from a list presented to them by the system.

If items are applied to suspense at this point, then the GCCM functionality to make an internal payment should be used to pass entries between suspense and the correct internal Business or Control Account.

##### 4.3.12.1.1. Unapplied – New York

As noted above, the regions investigate unapplied items differently and in New York items are generally moved from the nostro to a suspense account after a set period of time. Items are then investigated or returned to the originator if required.

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GCCM D&R should not disrupt this process and so allow users to apply items to suspense either via an originating system (simply processing the request as required) or via the process described above.

#### 4.3.12.1.2. Example of Unapplied Credit – Applied to Suspense and then Investigated

1. Initially a bank credit of USD 10mm came in, say, to Chase
2. End of day, sent to suspense

Debit LBI Nostro Account	10,000,000
Credit LBI Nostro Suspense	-10,000,000

3. After research, able to identify owner and apply:

Debit LBI Nostro Suspense	10,000,000
Credit LBI Fixed Income Nostro Control Account	-10,000,000

4. If after research & a set number of days, can't apply item, then return:

Debit LBI Nostro Suspense	10,000,000
Credit LBI Real World Nostro Account	-10,000,000

#### 4.3.12.1.3. Unapplied Bank Credits – London

In London, any unapplied bank credits will remain in the nostro account and it will not be moved to a ledger or control account. GSSR will be performing a daily reconciliation between bank account statements vs. GCCM. It is envisioned that a feed from GSSR will be brought into GCCM so that the accounting entries for items left in the unapplied bank credits would be accounted for on a backdated basis.

#### 4.3.12.2. Auto Post of Unapplied Items

A number of suggestions have been made to automate the process of applying funds from an external nostro to various Internal Business Accounts. This section details these suggestions and how they could work in practice.

It is expected that GCCM would attempt to identify a likely home for unapplied funds and will then pass sufficient details from the incoming confirmation to the identified system (as FPS does for ADP) to allow the system in turn to apply the funds to a customer or ledger account.

In particular a limited number of the Firm's systems (ADP potentially) are understood to have a process that applies funds to internal ledger accounts after reading the information contained in the notification from the bank. It would be useful to understand this further as the auto-application of items based on

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trawling the incoming notifications for information and then using this to apply funds to internal account could be extremely useful.

4.3.12.2.1. Always Apply Funds to a Particular Internal Business Account for a specific External Account

In the case of ADP, currently FPS doesn't perform any matching. All incoming advices are sent back to ADP where the matching is performed. ADP matches on account number and validates the details of the payment against the master account file for account name and address.

Similarly GCCM D&R should allow users to link up an external account with a particular GCCM account, say an Internal Business Account, for the posting of all unapplied funds to on an automated basis.

So as an item arrives, it is first reviewed against any existing preadvice notifications for the external nostro account and if a match is not found, then the system should place the item in an unapplied queue for the external nostro account. This unapplied queue is then automatically cleared by creating a 'matched' GCCM record using the process for manual creating records described above, with the account to be credited as the linked account that has been defined in advance.

In turn GCCM D&R should publish details of all items thus 'matched' back to the source system(s) that are identified as having posted to the particular GCCM Business account.

4.3.12.2.2. Always Apply Funds to an Internal Business Account for specific Formatting / References

GCCM D&R should allow users to create rules for the automatic application of funds in external accounts to a particular GCCM account, say an Internal Business Account, based on some user defined criteria.

The criteria should be based the information contained in the fields normally available on a confirmation message sent via the banks (e.g. a MT910) and should include the ability to specify such things as common references amongst other text. The system must also allow combinations of criteria to be specified.

So as an item arrives, it is first reviewed against any existing preadvice notifications for the external nostro account and if a match is not found, then the system should place the item in an unapplied queue for the external nostro account. This unapplied queue is then automatically reviewed against the predefined criteria set.

If a criteria set is found to tally with the information supplied in the confirmation, then the unapplied queue should be cleared by creating a 'matched' GCCM record using the process for manual creating records described above, with the business account to be credited linked to the criteria set in advance.

In turn GCCM D&R should publish details of all items thus 'matched' back to the source system(s) that are identified as having posted to the particular GCCM business account.

4.3.12.2.3. Always Apply Funds to an Internal Business Account dependent on look-up to GARM

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GCCM D&R should automate the application of funds in external accounts to a particular GCCM internal account, say an Internal Business Account, based on Customer Account Numbers supplied with the confirmation of credit.

CM user should be able to define strings that could be a Lehman customer account on a Firm settlement system, i.e. a template for the account numbering on the settlement system. This could be considered a special case of the general criteria look-up outlined above.

For example \*765????\* could indicate a LBI RISC client account number and so the default assumption would be to post the items through to an internal account for investigation by a RISC user but the number of false positives can be reduced by looking up in GARM to confirm the client account number exists and is in fact on a LBI RISC client account.

When an item arrives, it is first reviewed against any existing preadvice notifications for the external nostro account and if a match is not found, then the system should place the item in an unapplied queue for the external nostro account. This unapplied queue is then automatically reviewed against the predefined criteria set, and thence against the specific customer account form templates.

If the system is able to tally what appears to be a client account number with the predefined strings to look for, it should send this potentially client account number to GARM to see if GARM can find a similar record in its database.

If it does then this should be communicated back to the GCCM including information on the client account owner's name and other basic details. In turn these details should be compared with the data supplied with the confirmation to see if the account owner name agrees. If it does then the unapplied queue should be cleared by creating a 'matched' GCCM record using the process for manual creating records described above, with the business account to be credited linked to the criteria set in advance.

If the system is not able to match the client account names, then item should remain in an unapplied status but with details of the GARM match kept with the D&R unapplied record so a user can review the data to see if the match was correct but for example a shortened version of a name had been used.

If GARM does not return a match, the item should remain in the unapplied queue for the external nostro.

In turn GCCM D&R should publish details of all items thus 'matched' back to the source system(s) that are identified as having posted to the particular GCCM business account.

#### 4.3.12.2.4. Issues of Missing Customer Account Numbers on Incoming Credits

Currently matching incoming credit confirmations to pre-advice and / or automating the application of funds based on client account details is made more difficult as the incoming credit confirmations do not always quote the customers' account numbers.

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To further aggravate the situation, even if customer account details have been submitted to the agent bank for book transfers, i.e. where the customer banks with the same bank as Lehman, confirmations of credits have been advised to ourselves with no client account number. This is especially true in the case of MTS.

Therefore CCM have been in discussion with the nostro banks about potential solution based around the specific formatting of payments into client accounts that may resolve / reduce the prevalence of the issue.

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## 5. Accounting Engine and In-House Bank Sub-Ledger – Ref 1.5

The following chapter details the key features of the D&R sub-ledger that will be used to record the activity of the in-house bank.

GCCM D&R will internalize cash flows through intercompany transactions supported by an in-house bank concept that should enable CCM to minimize the number of real-world bank accounts the Firm owns by replacing external nostro accounts with internal business accounts. It is envisaged that the in-house bank will perform the clearing services for all Firm disbursement and receipts and automate the funding of the activity as a by-product of handling the instruction.

The in-house bank will keep an arm's length relationship with other Firm entities and keep a clean audit trail of all requests it receives and maintain accounting entries for each participating subsidiary in its books. It will be possible to settle intra group requirements via book entries across inter-company accounts instead of cash entries through real-world bank accounts

It is not expected that the in-house bank will be a single entity or a registered bank though CCM are looking to leverage the Firm's bank licenses wherever possible. For example LBHI UK Branch funds LBIE and in turn LBHI funds LBHI UK Branch, thus both LBHI and LBHI UK Branch would be considered funding entities for the Firm and form part of the in-house bank on GCCM D&R. It is expected that LBI will act as an in-house bank to itself.

The in-house bank will be set-up so that the Firm's current and future businesses and applications would communicate with D&R as if communicating with a real-world bank. The in-house bank will host 'customer' accounts (where customer refers to Treasury support view of the internal business lines), to be referred to as Internal Business accounts that will represent a business 'nostro' or cash account with the in-house bank. Businesses will be able to request payments from their business account either to another part of the Firm or to a third party.

All accounts will be available on-line for the users to review in real-time and via GSSR at the end of day for business owners to reconcile activity through their business accounts against their own trade or customer bookings.

### Key Features:

- For businesses with external accounts and existing systems the implementation should be as simply as a change in nostro agent bank and so the impact should be limited. External accounts will be hosted with GCCM alongside internal business accounts and external nostro accounts should be migrated to internal business accounts over time without impacting the payment flow.
- The total of the accounts within each non Treasury entity on GCCM should reflect intercompany balance with a Treasury entity. At DBS once both GCCM and the trading systems have passed the journals the sub-ledger balances should net to zero except for true real world account balances.

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- Businesses will be able to have as many internal business accounts within the in-house bank as they choose. Treasury will not impose any constraints on these. GCCM D&R will report the activity through each internal business account:

The in-house bank will also host the external cash accounts of the firm and will be used to track activity through the external accounts and fund them. The various views of the funding requirements and account activity are discussed in the previous chapter.

The in-house bank will apply interest to intercompany and internal business accounts at the Treasury Index rate to recover the cost of funding the various cash flows for individual businesses and entities. In addition D&R will allow the allocation of fees back to the business units based on activity as opposed to the generic allocation that exists today.

## **5.1. Sub-ledger Infrastructure**

### **5.1.1. In-House Bank Architecture**

As a sub-ledger the D&R in-house bank will consist of a representation of the Firm's entities that have rules defining how they interact with each other. Within D&R, each entity will in turn:

- Consist of a series of accounts, for example
  - Nostros
  - Intercompany Interest and Principal accounts
  - Control accounts / dummy nostros
  - Suspense
  - Other including Plug accounts
- With each account will be linked to a series of properties, for example:
  - A DBS account
  - BPM code
  - Available currencies (if accounts are set-up as multi-currency only)
  - Produce statement for GSSR
- That is governed by a rule set
  - Rule set for entity will note how to settle a payment / receipt if a message comes through for it.
    - For example: LCPI movements in USD settled through NY In House Bank, European currencies through London In House Bank and Asian currencies through Tokyo In House Bank
  - Rule set for accounts will note how it behaves if a 'posting' comes through to it.
    - For example: Intercompany principle and interest lines in each entity must balance with equivalent account in linked entity and offsetting entry to posting must occur within each entity in pair.

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### 5.1.2. Legal Entity

GCCM D&R will be a sub-ledger that will post accounting entries to DBS on a daily basis. The sub-ledger will consist of a series of accounts that will be used to track the cash activity (internal and external) for the Firm. Each account set-up for a business within GCCM must reside in one of the Firm's entities. Each entity will in turn be linked with a Treasury entity that can fund movements through the entity. Activity between the entities will be recorded via a pair of intercompany accounts. Note entities will not have to be linked to the Treasury entity in the same jurisdiction as they domiciled and may change their funding relationship over time.

Journals will be posted between accounts to represent the movement of funds between the ledgers / accounts.

This section defines how a legal entity should be set-up and identified, its funding relationship, its external account structure if relevant and related information.

#### 5.1.2.1. Required Information:

##### 5.1.2.1.1. Legal Entity Table

This table will define basic details for the entity.

Field	Character	Comments
Legal Entity	Text	Name
DBS Legal Entity Number	Text	DBS Number
Legal Entity Number	Number	GCCM id
Legal Entity Address	Text	Postal Address
Legal Entity Owner	Text	Business / Ops owner
Functional Currency	3 letter code	Is this required?
BPM	Number	LB Management code for Owner
Business Line	Defined list	FID / Eq, etc
Business Line sub-division	Defined list	Within overall
Signing / Approval Process	Defined list	Mandate link to Signatories database Number of approvals required
Domicile Location	Text	Note this data can be supplied by NWM db if linked
SPV Flag	Y/N	
Treasury Funding Entity Flag	Y/N	
Specific notes	Note	General comments field for now; including code words? for common set-up concerns



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#### 5.1.2.1.2. Table Linking Entities

This table identifies an entities funding and paying entity, where relevant, for a particular currency.

Field	Character	Comments
Legal Entity Number	Number	Name
Paying Agent Legal Entity Number	Number	GCCM record id identifying entity that makes payments on behalf of entity for noted currency
Treasury Funding Entity Number	Number	GCCM record id identifying entity that funds the legal entity
CCY	Code	Allow option for all non specified currencies

#### 5.1.2.1.3. Default Accounts numbers

In addition for each entity a series of default accounts should be set-up to be used when a user does not complete all the optional details on a request or the system is unsure which account to use.

Field	Character	Comments
Legal Entity Number	Number	Name
D&R Account Number	Number	GCCM record id identifying account
CCY		
Function	List	Function the defined account is to be sued for from list of:  Internal Nostro, External Nostro, Seg, Back-up, Reserve 1, Low-Value, ACH, Funding Nostro, Suspense, Plug, Fees, etc.

For each entity an Internal Business Account, a Suspense and Plug account should be required.

#### 5.1.2.1.4. Entity Sub-Ledger mapping table

To allow users to translate entity numbers between different systems.

Field	Character	Comments
DBS Legal Entity Number	Text	Name
Sub-ledger	Text	From list of current originating systems
Sub-ledger Legal Entity Number	Text / Number	

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5.1.2.1.5. Authorised Currencies for Entity

It is assumed that not every currency set-up in GCCM D&R will be required for every entity as it is added into D&R. In fact some entities may only ever operate in one or two currencies. Therefore as part of the set-up for the entity, the entity should be assigned currencies rather than defaulting to all.

Field	Character	Comments
DBS Legal Entity Number	Text	Name
Currencies	Text	Select from drop down list

It should be possible to assign further currencies to an entity at any time.

The adding or assign of a currency should then drive the creation of accounts such as at least one internal nostro, one FX account, intercompany with funding entity for currency, P&L interest and charge accounts, plug and suspense in currency and finally conversion in currency.

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### 5.1.3. Business Line

Business lines cut across legal entities and will be the owners of the individual Business accounts that reside in GCCM. It is usefully to include this detail to allow businesses to extract all their accounts easily so they can understand their cash position / obligation to Treasury at any point in time. It will also aid reporting of volume statistics by business.

Each account will be assigned to a BPM code that will generally indicate the business that owns the account so the following tables will simply confirm the details for the users on GCCM. Also it may be worth considering extensions to the BPM code to ensure that CM have the level of detail they require for reporting purposes.

#### 5.1.3.1. Required Information:

##### 5.1.3.1.1. Basic Business Line Information

Field	Character	Comments
Business		
GCCM unique identifier		
BPM		LB Management code for Owner
Business level	Interger	For example Fixed Income / Equities would be highest roll-up as per BPM And so on down
Location		
Extended BPM		Allow sub-divisions of business for example by location – GCCM specific  Multiple Extended BPMs may role up to one BPM
Overall business Owner		
Payment fee recovery allowed	Y / N	Is recovery of payment charges from individual Business accounts owned by business line allowed?
Intercompany Interest recovery allowed	Y / N	Is recovery of intercompany interest expense from / posting of intercompany interest earnings to individual Business accounts owned by business line allowed?

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#### 5.1.4. Accounts

This section defines how an account should be set-up, identified, its external account if relevant and related information.

Accounts should be created via a user interface either through an existing request process such as the set-up of new ledgers in ITS and DBS or through a new procedure. In either case all account set-up should be under dual control and require at least an input and approval stage.

Accounts will be grouped for easy of investigation and balance or position reporting. These groupings will be definable using the static data included in the set-up of each account and the system should allow the groups to be set-up of by owner user, BPM, legal entity, currency, location, account type or some combination of these characteristics.

##### 5.1.4.1. Required Information:

###### 5.1.4.1.1. Basic Account Information

Field	Character	Comments
Account Number	Numeric / Character	Unique Ref May be non-sequential as ranges may be saved for particular purposes Format to reflect structure / purpose
Account Owner	Text	Business / Ops owner
Account Type	Defined list	Will define accounting / interaction rule sets Options <ul style="list-style-type: none"> <li>• Real World Nostro</li> <li>• Real World Cash / Depot</li> <li>• Intercompany</li> <li>• Internal Business Account</li> <li>• Fees</li> <li>• Interest</li> <li>• Suspense</li> <li>• Plug</li> <li>• Conversion</li> <li>• PPS Margin Accounts</li> <li>• Margin Accounts (?)</li> </ul>
Account Name	Text	
Currency	3 letter code	
Legal Entity	Text	Name
DBS Legal Entity Number	Number	DBS Number
DBS Account Number	Number	Account journals to be posted to
Sub-ledger	Text	System containing offset postings if applicable

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Sub-ledger Legal Entity Number	Text / Number	Sub-ledger entity number
Sub-ledger Account Number	Text / Number	Sub-ledger offset postings
Extended BPM	Number	GCCM code for Owner
Business Line	Defined list	FID / Eq, etc
Business Line sub-division	Defined list	Within overall
Signing / Approval Process	Defined list	Does account require 2 or 3 stage approval process? Are any limits involved such as LBI It is likely that this will only be used for the manually input items. Automatically fed items are assumed to have gone through the appropriate approval process within the originating system.
External Account Number	Text / Number	Note this data can be supplied by NWM db if linked
Segregated Flag	Y/N	Client money
Internal Group Account Belongs to	Name	

Note included in the list of account types are two types of Margin account. This is to reflect the differing margin process that exists.

#### 5.1.4.1.2. Linked Accounts

During the implementation of the system it is expected that as GCCM D&R intermediates between existing settlement systems and the nostro banks a one to one mapping will exist between the Internal Business Account and the external nostro account.

Specifically an existing nostro account used for example by source system A for entity B would remain open and available to the existing user day one until internalised at some future date.

However rather than having GCCM D&R simple act as a black box through which traffic for a nostro account passes through untouched, CCM would still want to have the requests validated and included in funding numbers.

Therefore the intention is to set-up two accounts representing the external account within the same entity on GCCM:

- An external nostro account that is linked to the payment channel
- An Internal Business account that is linked to the users and their source system

Users would release messages from their system quoting the new Internal Business account (or an account number that can be translated by GCCM to the new Internal Business account). GCCM would 'know' that this business account is linked to a specific external account and so would process the requests through this external account.

For the users it would appear as if their instructions are being processed as per their current set-up. At future point in time the requirement for the external nostro account would be reviewed and potentially closed. When this happens the link between the two accounts would become invalid but the source system

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would not need to be reconfigured to use an Internal Business account as this would have already happened.

Therefore a process / table is required to allow the linkage of Internal Business accounts and external nostro accounts. A suggested format for the table is

Field	Character	Comments
Account Number	Numeric / Character	Internal Account
Account Group	Character	To allow more than one internal account to be linked to an external account
Account Number	Numeric / Character	External Account

Correspondingly if confirmations of credit / debit come in for an external account that has been linked to an Internal Business Account, GCCM can use the table to identify where to apply any unapplied items automatically.

#### 5.1.4.2. Additional Information for External Nostros

Field	Character	Comments
Account Number	Numeric / Character	Unique Ref
External Account Number	Text / Number	Note this data can be supplied by NWM db if linked
Agent	Text	Agent Bank info for nostros Note this data can be supplied by NWM db if linked
Account Location	Text	Note this data can be supplied by NWM db if linked
External Account Number	Text / Number	Note this data can be supplied by NWM db if linked
GARM ref for SSIs	As GARM	
Complex Matching		Use this process for matching rather than default of Simple Matching
Additional Info	Text	
Additional Accounting Rules	Text	On top of basic defined for account type
Segregated Flag	Y/N	Client money
SPV Flag	Y/N	
Operating Cash Flag	Y/N	
Override day count for message generation	Number	Override currency default for value days prior to message value that external requests are generated
End of day target balance	Number	Balance to be targeted for end of day funding – default zero but will vary within regions
End of balance long balance threshold	Number	Balance threshold for end of day funding below which balance will be left – default zero (may not be zero as it may not be cost effective to say clear a balance of less than ten dollars long)
End of day short balance	Number	Balance threshold for end of day funding below which

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threshold		balance will be left – default zero (may not be zero as it may not be cost effective to say clear a balance of less than ten dollars short)
External Group Account Belongs to	Name	
Special CM feature	Defined list	E.g. Pooling / Sweep in place that could effect accounting and processes
Reporting Requirements		
Intraday Credit Limit		
Exclude account	Y/N (Default N)	Exclude from net currency balance reporting and auto fund / sweep processes.
Send MT210s or equiv	Y/N (Default Y)	Whether or not MT210 messages or equivalents should be sent externally
Swift Zengi Ref		May be included as part of SSI data if more relevant there

Linked to External Nostro accounts will be further static including

- SSIs
  - Including alternative external account numbers (i.e. other forms in which account number can be presented)
- Available payment channels

#### 5.1.4.2.1. Required Information for External Nostro Account SSI Data

The following table outlines the basic information that will need to be maintained on Lehman owned nostro accounts that will be maintained on GCCM D&R to allow payment and receipt messages to be generated to Fund the external accounts and release instruction requests correctly identifying accounts at the Firm's agent banks, etc.

Field	Character	Comments
Account Number	Numeric / Character	
Currency		
Pay / Receive / Dual		To allow for separate formatting for payment and receipt in case required
Intermediary Bank		
Intmd Additional Field 2		
Intmd Additional Field 3		
Intmd Additional Field 4		
Intermediary Code		
Intermediary Code Type		
Account with Bank		
AwB Additional Field 2		
AwB Additional Field 3		
AwB Additional Field 4		

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Account with Bank Code		
AwB Code Type		
Account with Bank Account		
Beneficiary Name		
Beni Additional Field 2		
Beni Additional Field 3		
Beni Additional Field 4		
Beneficiary Code		
Beneficiary Code Type		
Beneficiary Account		
Default Payment Type		E.G. MT103 or MT202
Generate Message		Assume Yes but allow No, in which case no messages are generated from GCCM D&R
Default Charge Option	OUR / SHS / BEN	As per Swift whether bank charges are split, taken by LB or beneficiary.  It is expected that individual messages will have override to this but this default should be picked up if not stated on individual request.

#### 5.1.4.2.2. Alternative External Account Numbering

Field	Character	Comments
Account Number	Numeric / Character	
External Account Number		Alternatives
Comment		Detail of where alternative used; E.g. seen on MT950

#### 5.1.4.2.3. Account Specific Cut-offs

The external payment and internal book to book cut-offs applied to the account by the agent.

Field	Character	Comments
Account Number	Numeric / Character	
Agent's External Payment Cut-off		Latest time a payment that will be external to agent can normally be released to the agent - CCM users can override and force payments out.
Agent's Internal Payment Cut-off		Latest time a payment that will be internal to agent can normally be released to the agent - CCM users can override and force payments out.



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#### 5.1.4.3. Additional Information for Intercompany Accounts

Field that defines extra information required for pairs of intercompany accounts.

Field	Character	Comments
Account Number	Numeric / Character	Unique Ref for Intercompany
Index for Interest		Index for calculating the interest on account
Account number of other account in pair		Account linked to account.
Withholding tax rate		If applicable for credit positions
Interest period		Default would be daily

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**5.1.4.4. Further background on the various account types and how they interact with each other**

**5.1.4.4.1. Real World Nostro**

Can be used to make payments and receive cash.

External account would be included in the reporting screens and the Funding process by default, though it should be possible to exclude individual accounts from the automated Funding process.

Internal movements to external account should be allowed though certain intra Lehman movements may paid real world. (Basic rule would be transfers to another business or external account in the same entity should be internal whereas transfers to an account in another entity would be external, particularly if either entity is regulated.)

**5.1.4.4.2. Real World Cash / Depot**

Primarily used for the settlement of securities trades and cash will be debited and credited automatically as a result of the securities trades.

External accounts so defined will be funded from central nostro accounts and should be included in Funding process by default.

Can be used to make payments and receive cash though expectation would be that this is very unlikely as cost will exceed Real World Nostro payment costs.

The particular sub-type of depot accounts would be Tri-party accounts, which may have different funding requirements.

**5.1.4.4.3. Internal Business Account**

Account used by the business to make payments from and receive credits to – their account with the in-house bank. The business account could be linked to real world account. (Internal and External entries should look similar at this level.)

Should post to a control / conversion line at DBS to which settlement systems post offset. At DBS business accounts should go flat if there are no breaks.

**5.1.4.4.4. Intercompany**

Intercompany accounts link a pair of entities and so exist in pairs: one in each entity representing the payable to / receivable from the other.

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Each non-Treasury entity will be linked to a single Treasury entity via a pair of intercompany accounts (one per entity) per currency. Treasury entities will have limited number of interconnections between themselves via a pair of intercompany accounts (one per entity) per currency.

Pairs of intercompany accounts should always been in line.

Multiple Internal Business Accounts will link to an intercompany. In effect the intercompany account represents the entity's position with the in-house bank and the Internal Business Accounts the sub accounts of the entity.

All activity involving movements between entities should flow across at least one set of intercompany accounts.

5.1.4.4.5. Fees

Expense account to which fees are posted – external cost passed on by agents and recovery of fees from business lines.

Should post to P&L accounts at DBS

5.1.4.4.6. Interest

Expense account to which interest is posted – external costs passed on by agents and recovery of funding / interest from business lines.

Should post to P&L accounts at DBS

Credit and Debit interest accounts should be separated at the sub-ledger level.

5.1.4.4.7. Suspense

Suspense accounts exist to allow items to be applied to a ledger so that they can be included in the cash / funding position but would not be the true destination account that funds should be applied to. In fact items should be moved from a suspense account to either another GCCM account or be returned to remitter within 30 days.

Reporting of the balance and unreconciled items in the suspense account should be done daily.

5.1.4.4.8. Plug accounts

Exist as default account that should be used when unable to determine second account in a journal.

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For example a debit/credit to an intercompany account must be offset with credit/debit to another account. This other account would have to be the Plug account for the entity if the actual second account did not exist, was an invalid choice or could not be determined.

Reporting of the balance and un-reconciled items in the plug account should be done daily.

#### 5.1.4.4.9. Conversion

Essentially an Internal Business Account used exclusively with Finance to move items through to DBS without having to set up full infrastructure at sub-ledger level.

#### 5.1.4.4.10. PPS Margin Account

External account used to by certain exchanges to cover changes in margin requirements. Exchanges have right to automatically debit / credit PPS accounts to cover / return short /long margin positions.

Accounts should be included in the automated Funding process but would not be used to make other payments.

- PPS Margin accounts are auto debit / credit accounts that can be zeroed daily as any other real world nostro and can be treated as such by GCCM though they should only be used for FUND entries not support free cash movements.

#### 5.1.4.4.11. Margin Account

External account used to represent margin requirement with exchanges – positions will always be long cash but that cash cannot be returned to holding company unless margin requirement is reduced.

As a result should be excluded from Funding process and also may be necessary to exclude from the cash balance reporting numbers or at least show as separate Operating Cash number that is not available for general use.

- The cash in these external accounts are not available to the rest of the Firm until the margin requirement reduces. Therefore these balances should not appear in the Currency Positions numbers to be used for funding or including in automated Funding process.

#### 5.1.4.4.12. FX Conversion accounts

These accounts will be used to manage the conversion of requests in currency A into currency B. They would generally be generic within an entity, so that cross currency bookings can be more easily facilitated without having to say convert EUR into USD to convert to GBP:

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E.g. LBHI's USD FX Conversion account and LBHI's GBP FX Conversion account rather than LBHI's USD GBP FX Conversion account (USD) and LBHI's USD GBP FX Conversion account (GBP)

Though it should be noted that pairs of specific currency conversion accounts may be set-up to handle specific conversions that will see higher volume of bookings, for example Euro In-currency conversions.

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### 5.1.5. Currencies

The following section outlines the minimum information that should be retained on a particular currency. The system should be flexible enough to add currencies in the future.

#### 5.1.5.1. Required Information

Field	Character	Comments
Currency	3 letter code	
Currency Name	Name	Full title
Day Count		
Working Week		Whether currency follows Western working week or includes Sunday but not Friday's
Holiday Calendar ShortCode		Default
Override day count for message generation	Number	Override currency default for value days prior to message value that external requests are generated
Default Interest Index		
Number of days forward to generate external messages		
Rounding		Number of decimal points messages can be quoted to.  Default 2 but JPY would be zero
Home Country		
Default accounting generator process		Simple or Complex – i.e. simple all items accounted for, complex only confirmed items accounted for on value date
Send MT210s or equiv	Y/N (Default Y)	Whether or not MT210 messages or equivalents should be sent externally

#### 5.1.5.2. Business Day

This table will define a normal business day for the currency and indicate difference from GMT of major market (i.e. New York for USD, Frankfurt for EUR).

Field	Character	Comments
Currency	3 letter code	
Opening Time External movements	Day : Hour	First point at which activity is likely to settle (requests can in fact be sent externally earlier). Internal activity can settle as soon as business day of system changes for currency.
Closing Time External movements	Day : Hour	Time at which system should close currency for external flows with current date
Closing Time Internal movements	Day : Hour	Time at which system should close currency for internal flows with current date.

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Hours different from GMT	+/- Hour	
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The internal cut-off will be after the external cut-off and will be the approximate point when postings to DBS are generated for the particular currency. After the DBS postings have been generated and sent, it is expected that the value date for the currency will roll forward.

Any requests received after this internal cut-off for the current system date should be treated as a back valued request.

### 5.1.5.3. Calendars and Working Weeks

The system should discount weekends and global holidays but if at least one currency is available on a day then that day should be counted as a working day for the system and so contribute to the days maintained on the system.

In particular the system will need to cope with working weeks that run from Sunday to Thursday inclusive as part of its initial implementation and so the system should be open for Sunday in addition to Monday to Friday.

- The firm already has external accounts open Sunday to Thursday but these are controlled Monday to Friday; for example Israel Shekials and is the process of opening accounts (or reviewing business requirements) for Saudi Riyal, Egyptian Pound and Iraqi Dinar accounts.

If DBS is not available to accept postings for a Sunday, GCCM D&R should post any activity including intercompany interest on the following working day for DBS (this would generally be the Monday in this scenario).

For calendars GCCM D&R should take in the default calendar for all currencies supported and ensure the system is available to accept and process activity on all valid business days for a currency.

- For example 25 December is a valid value date for JPY (assuming it does not fall on weekend) and so the system should be open.

However GCCM D&R should also take in alternative calendars to allow users to override the non-working day validation of value dates for days when the default calendar indicates that the currency should be closed but is in fact open.

- For example in AUD state holidays appear in calendars driven (referred to) by cities' business days that are not actually country holidays and so general cash and securities settlement can occur

If DBS is not available to accept postings for the given value date, GCCM D&R should post any activity including intercompany interest on the following working day for DBS.

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5.1.5.3.1. Calendar Required Information

Field	Character	Comments
Currency	3 letter code	
Holiday Calendar Name		
Holiday Calendar ShortCode		
Holidays	Date	



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### 5.1.6. Interest Indices

Similar to calendars and currencies, GCCM will need to maintain basic information and receive daily updates on the rates of certain standard interest indices. At the moment the source of this information is open.

Users should be able to define indices based on other indices. These manufactured or manually updated indices are likely to be attached to certain intercompany accounts / fee calculations where as most accounts will default to the Firm's Index rate.

#### 5.1.6.1. Required Information

##### 5.1.6.1.1. Background

Field	Character	Comments
Interest Index		
Comment		
Location definer		
Currency		
Autoload, Manufactured or Manual Update		
Source		If autoload
Reset frequency		Generally daily
Calendar		Would override currency calendar?
Accuracy		Number of decimal points rate quoted to
Interest basis		Would override currency calendar?
Underlying Index		For manufactured indices
Spread		For manufactured indices

##### 5.1.6.1.2. Rate information

Field	Character	Comments
Index		
Date		
Rate		
Roll forward flag		

Note where a rate update has not been received, it is better that the system rolls forward the prior working day's rate than have no rate in the field though users should have the ability to go in and amend rates for individual days.

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## **5.2. Accounting Per Request – Ref 1.5.1**

Accounting will be generated within the in-house bank once a request has passed through the payment engine outlined in Chapter 4. A flow chart and table showing the various stages that a request goes through as it is processed is available in Appendix 10.1.3.

### **5.2.1. Process Name: Validation for Accounting – Ref 1.5.1.1**

To ensure activity is correctly advised with sufficient data to create the correct journals to minimise the number of invalid accounting entries being generated, the requests should pass a validation process prior to creating the journals.

These checks are to be run in conjunction with the validation process undertaken elsewhere in the system but will flag specific items to prevent the failure of accounting entries to post to DBS.

Once items have been through validation process they should be passed to next stage at which GCCM should determine required accounting entries

Entries passed to the accounting engine should be checked for the following:

- Quoted accounts are both set-up in GCCM and required static data is available
- Value date
- Currency of payment is same as accounts
- Internal Receipts

These checks are not designed to necessarily fail instruction but will require booking to pass through additional processing. An issue should be flagged to the users via an Accounting Exceptions queue process.

#### **5.2.1.1. Identify Reversal Requests – Ref 1.5.1.2**

Entries that have been sent to the Accounting Engine as a result of the cancellation or amendment of a request that has previously been processed by the Accounting Engine should be flagged as a Reversal and processed separately.

All journals associated with the original request should be identified using the D&R audit trail. This list of journals should be validated against the journals that would be required to process the reversal between the two accounts as a new request. The two lists should be equal and opposite.

If the two lists of journals do not agree, then the discrepancies should be flagged to the user via the Accounting Exceptions queue process.

If the two lists agree, then the series of journals / account entries required to reverse the original request should be processed the sub-ledger.

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The effect on the accounts will be posted to DBS as part of the rolling batch process for accounting entries described later.

#### **5.2.1.2. Quoted accounts are both set-up in GCCM and required static data is available**

As soon as requests are passed to the accounting engine, there will need to be a process to check that the quoted accounts are in GCCM and that there is sufficient static available for the account for GCCM to determine the accounting required for the item.

If for what ever reason an instruction has got to this point and it turns out one of the accounts quoted on the instruction do not exist in GCCM or have insufficient information attached, then the item should fail into an Accounting repair queue.

CCM users should be able to monitor this queue and have the options to either repair items in the queue by amending account numbers or resubmit the request to accounting. (The latter assumes the request account / information has been added in the interim.)

#### **5.2.1.3. Currency of payment is same as accounts**

If either account has a different currency to the currency of the request, flag the instruction for FX processing if not already done so.

#### **5.2.1.4. Internal Receipts – Ref 1.5.1.3**

Internal Preadvice notifications should be diverted to follow the additional steps below to ensure that the booking of the receipt and the equivalent payment do not duplicate accounting entries:

1. Review activity through account to be credited to determine if offsetting internal payment has already been passed.
2. If so, then link the two requests and do not process the receipt any further.
3. If no payment is found and the debit account is quoted on the notification, then review activity through account to determine if offsetting internal payment is pending processing.
4. If so, then link the two requests and do not process the receipt any further
5. If no pending payment is found and the debit account is quoted on the notification, then email the debit account owner to request authorisation to pass debit entry to their account – Ref 1.5.1.4.
6. If they authorise the request, then create internal payment and link the receipt to generated payment. Do not process the receipt any further.

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7. If they reject the request, then cancel the receipt and pass the necessary notification back to the source of the request with the appropriate 'error' code.
8. If debit account is not quoted on the notification, then cancel the receipt and pass the necessary notification back to the source of the request with the appropriate 'error' code.

#### 5.2.1.4.1. Auto-Created Internal Payment Ref 1.5.1.5

The request to generate an internal payment from an internal preadvice should clearly show the necessary details on the request to allow the user to authorise the request and the system to generate the accounting once the payment has been correctly authorised.

The payment should be authorised with the same number of signatories as the predefined standard for the debit account, i.e. two or three as appropriate. Once authorised the request should be reacted and processed by the systems as if it was a new request submitted manually.

The authorising users should have the functionality to reject the request if they wish. Notification of the rejection should be passed back to the source of the preadvice.

The payment reference should also show that it was auto-generated as a result of the preadvice request.

#### 5.2.1.5. Value Date – Ref 1.5.1.6

The value date of the request should be checked against the current value date of the system and holiday calendar for the currency.

If the request has a value prior then the request should be flagged as back-valued if not already done so.

If the request is on a currency holiday (but not a weekend), process as value date requested (for external activity value date may have changed anyway) and hold accounting entries back from posting if *DBS will not accept postings on currency holidays*.

Request for activity on a weekend for the currency should be rejected or moved automatically to the next available value date for the currency.

The additional entries required for the back-valuation of a request will be detailed later.

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### 5.2.2. Process: Identify Correct Accounting including Intercompany Entries – Ref 1.5.1.7

With the in-house bank model in place the intention is to route payment requests between Firm entities via intercompany accounts rather than real world nostros. To prevent the growth of numerous direct intercompany positions between the paying and receiving entity, GCCM should be designed to limit the intercompany positions any entity has to a single intercompany position. This single intercompany position should that position between the entity and the Treasury entity that is responsible for funding the entity.

To accommodate this single intercompany concept GCCM may need to create multiple intercompany movements to moving funds between entities. These multiple intercompany entries should be created automatically. This section describes the process of identifying the correct accounting entries for each individual request using Funding relationship as the primary intercompany.

Note the preference will be to limit the number of Treasury entities that can act as a Funding entity to minimise the number of steps involved in moving funds. Initially it is likely that at least LBHI, LBHI UK Branch, LBAH, and LBI will be defined as Funding entities in use. Over time the intention would be to reduce the number of Funding entities to branches of LBHI or just LBHI.

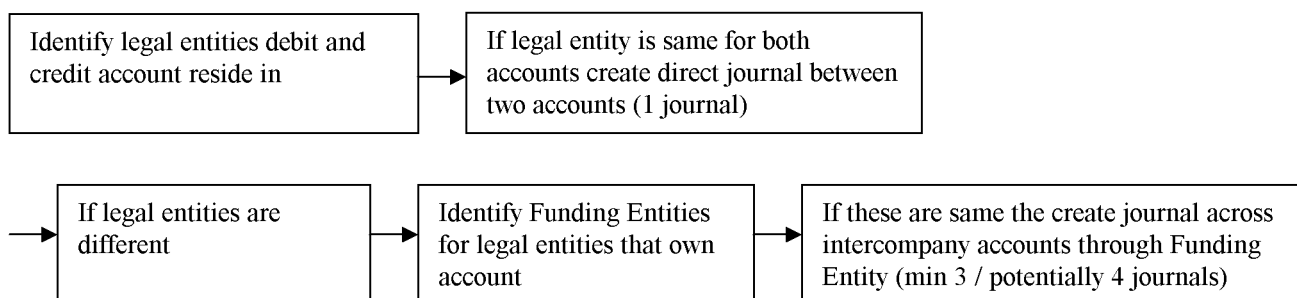
#### 5.2.2.1. How process could work

This process aims to outline the steps that should be taken to identify the set of accounting entries including intercompany records required to correctly show the movement of funds between entities and create the intercompany payable and receivable positions for the Firm's preferred funding structure.

For clarity it is worth noting that:

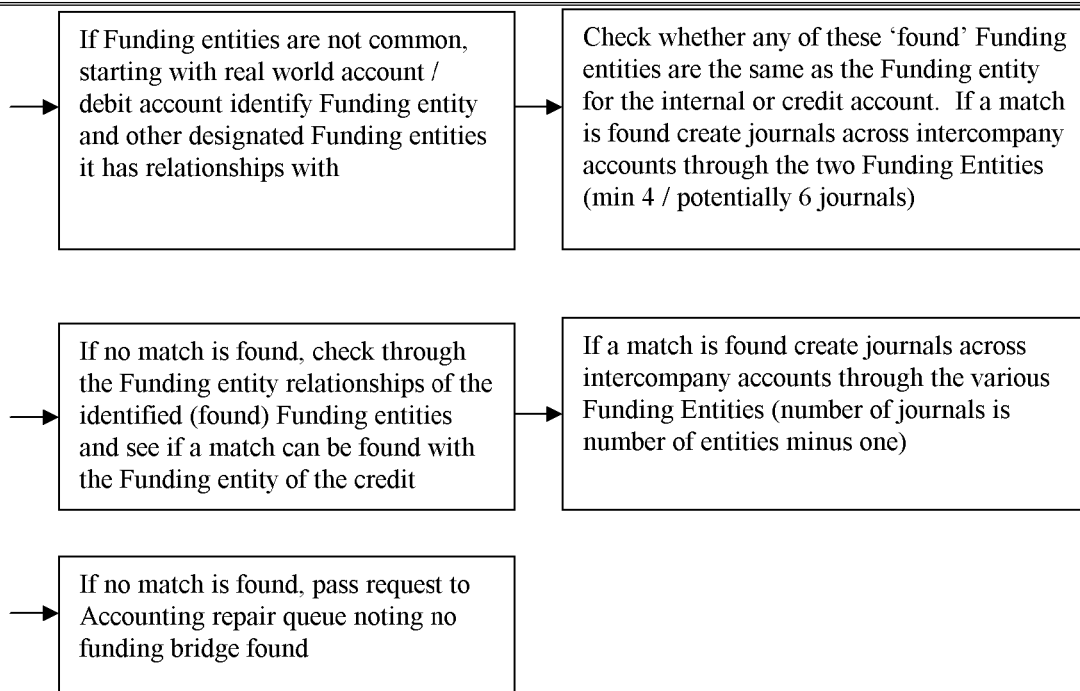
1. For Internal Payments both the Debit and Credit account will have be quoted on original request
2. For External Payments and Receipts either
  - a. both the Debit and Credit account will have be quoted on original request
  - b. or the external account number will have been assigned as part of the process of choosing of the external nostro and / or payment channel

The first step in confirming the accounting entries required involves identifying the legal entities that the two accounts quoted on the instruction belong to. These will then determine the steps that should be followed to maintain the Firm's preferred funding structure.



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This process outlined above should be successful without a significant number of steps as there are a limited number of Funding entities in existence and they will not have that many relationships between them as well. However to limit the processing time involved in finding the correct funding bridges it should be possible:

- to create a simple map of the relationships with a hierarchy table that could be used to direct the search process for the identification of the correct funding bridges.
- and / or limit the number of steps involved in the search process and pass the request to the repair queue once limit is passed noting no funding bridge was found.

Once the journal entries / funding steps have been identified the journal records should be created and the involved intercompany accounts updated.

The journals should then be created as per rules, special conditions and examples outlined in next sections. The rule set will also outline options for creating journals across intercompany accounts.

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### **5.2.3. Process Name: Create Journal including intercompany entries and cross-currency requests – Ref 1.5.1.8**

To take account information and create simple journal requirements based on identified accounts and rules outlined in Journal Rules document. Each journal should consist of the following information as a minimum:

- Debit account,
- Credit account
- Currency
- Amount
- Value Date
- Request Reference
- Unique journal reference (to be different from request reference, could be child)
- Any additional data supplied with request

Note the referencing any back valuation interest adjustment or cross-currency effect journals should be posted as separate journals but should contain same request reference id

The following sub-sections outline the accounting to be created for different scenarios identified in the preceding sections.

#### **5.2.3.1. One entity involved – no currency or back valuation effects**

The simplest scenario where debit and credit account are in same entity and the request is in the same currency as the accounts. In this case create one direct journal between the specified accounts in the GCCM D&R sub-ledger.

#### **5.2.3.2. Two entities involved – no currency or back valuation effects**

For this scenario debit and credit account are in different entities, specifically one account would be in the requesting entity and second account is in the Funding entity, and the request is in the same currency as the accounts.

In this case there would be two journals with mirrored amounts and each journal should include the intercompany accounts for the entities involved in each entity, that is

In entity A – originating account and entity A's intercompany account with Funding entity.

In Funding entity – Funding entity's intercompany account with entity A and 'beneficiary' account.

The beneficiary account would be the real world nostro if an external payment was to occur. See Appendix for internal scenario where this could apply.

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5.2.3.2.1. Example: External Payment of 100 by Treasury for Entity A

Reconciled against statement showing cash debit

Treasury Nostro		Treasury Intercompany with Entity A	
Dr	Cr	Dr	Cr
	100	100	
Entity A's Business Account with Treasury		Entity A's Intercompany with Treasury	
Dr	Cr	Dr	Cr
100			100

Reconciled against ledger credit from Ops booking for underlying activity;  
Reconciled by Ops / Firm Balancing  
Multiple business accounts may exist in entity.

**5.2.3.3. At least two entities involved – no currency or back valuation effects**

For this scenario debit and credit account are in different entities, specifically one account would be in the requesting entity and second account is not in the Funding entity, and the request is in the same currency as the accounts.

In this case there would be multiple journals with mirrored amounts and each journal should include the intercompany accounts for the entities involved in each entity, that is

In entity A – originating account and entity A's intercompany account with Funding entity and.

In Funding entity – Funding entity's intercompany account with entity A and a control account.

In Funding entity – the control account and Funding entity's intercompany account with entity B.

In entity B – entity B's intercompany account with Funding entity and beneficiary account.



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The beneficiary account would be the real world nostro if an external payment was to occur and entity B was the Paying Entity for Entity A.

5.2.3.3.1. Example: Internal Payment of 100 by Treasury for Entity A

Funding Entity	Treasury Control Account		Treasury Entity A Intercompany		Treasury Entity B Intercompany	
	Dr	Cr	Dr	Cr	Dr	Cr
	100	100	100			100
Entity A	Entity A Account with Treasury		Entity A Treasury Intercompany			
	Dr	Cr	Dr	Cr		
	100			100		
Entity B	Entity B Account with Treasury		Entity B Treasury Intercompany			
	Dr	Cr	Dr	Cr		
		100	100			

Reconciled against ledger credit / debit from Ops booking for underlying activity  
Reconciled by Ops / Firm Balancing

Entity A and B could in theory be same legal entity but different business. In this case intercompany accounts would see offsetting entries and be flat though Internal Business accounts would still show movement.

GCCM creates 'statements' for Internal Business and control accounts daily that are sent to GSSR.

See Appendix for internal scenario where this could apply.

#### 5.2.3.4. Cross Currency Request

In this scenario a user has requested a payment for a currency other than the currency defined for the debit account. Assuming this request has been properly re-authorised (discrepancy noted, a FX applied to booking and then approved) a series of additional journals will need to be created to take care of the FX.

The FX should be passed in the Funding entity rather than in the originating entity. The rate for the FX trade will either be input by a Cash Management user or will be defined in advance for a certain sub-set of

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requests (for example amounts under USD1mm may be able to use an End of Day rate or the current rate quoted on Lehman Live).

If entity A is originating entity and wants debit in currency 2 (CCY 2), entity B is Funding entity and payment is in currency 1 (CCY 1) and FX rate has been agreed

**Payment**

In entity B – debit entity B's control account and credit 'beneficiary' (nostro) account in CCY 1

**FX booking**

In entity B – debit entity B's FX exposure account and credit control account in CCY 1

In entity B – debit entity B's control account and credit entity B's FX exposure account in CCY 2 for equiv of request at defined FX rate

**Intercompany after FX**

In entity B – debit entity B's intercompany account with entity A and control account in CCY 2 for equiv of request at defined FX rate

**Intercompany true up**

In entity A – debit originating account and credit entity A's intercompany account with entity B in CCY 2 for equiv of request at defined FX rate

**5.2.3.4.1. Euro In-Currencies**

The accounting for Euro in currencies will be the same as for the general cross-currency requests detailed above but will be directed through specific conversion accounts.

**5.2.3.5. Back Valuation Request**

In this scenario a user request an entry with a prior value date. Assuming this request has been properly re-authorised (discrepancy noted and then approved) journals will need to be created to take care of the interest change and posted to the relevant accounts.

The booking for the principle is made in same way and is inserted into historical record with closest approximation to requested value date as stored in the 'live' database. The intention is to follow DBS concept of allowing items to be inserted up to five days prior to current value date.

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As before:

In entity A – originating account and entity A’s intercompany account with entity B

In entity B – entity B’s intercompany account with entity A and ‘beneficiary’ account

Interest is then calculated to true up positions as if payment had been made with the requested value.

(Note this may change the way external traffic is processed and so it may be that internal and external requests are treated differently so that the current external back valuation process can continue. The current process is that external costs are passed direct to originator’s nostro for their local approval and allocation to a P&L centre. The GCCM process assumes intercompany interest makes Treasury whole for an external costs – which there would not be for internal only movements where Treasury gains from one entity and pays a second. Then intercompany interest is reallocated down to the originator nostros for review and sign-off. )

Regardless of whether the principle can be inserted into the work for the value date request or exceeds the five day cut-off, and so is inserted instead on current day less the five days, the intercompany balance for the value date of the request should be recalled and updated with the back-valued request.

The updated balance should then be used to create the interest adjustment this flows into the subsequent value day’s intercompany balance which is used to create the interest adjustments for the subsequent day and so on. The calculation of intercompany interest is outlined later.

#### 5.2.3.5.1. Example of effect of back- valued request for 15

A request that increases the intercompany balance by 15 is sent with value date Today minus three days, and each of the intermediary days were valid working days.

Intercompany as of	Today - 3	Today - 2	Today -1	Today
Original bal	100.0000	150.0000	200.0000	200.0427778
Change outside interest		49.9791667	49.9683330	
Interest rate	0.0750	0.0760	0.0770	
1 days interest	0.0208333	0.0316670	0.0427778	
Back-value bal	115.0000000	165.0031250	215.0062920	215.0522794
Interest rate	0.0750	0.0760	0.0770	
1 days interest	0.0239583	0.0348340	0.0459875	
Difference in intercompany:				15.0095017
Daily difference (less principle change)	0.0031250	0.0031670	0.0032097	0.0095017

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From the above it can be seen that a journal would be created for the principle of 15 and for a total interest adjustment of 0.0095017.

Given the request was within the five day window, the journal for the principal would be passed with value date Today – 3. The interest adjustments could be passed as:

- one journal with value date today for 0.0095017
- or three journals each representing the adjustment a particular value date  
0.0031250 value Today – 3, 0.0031670 value Today – 2, 0.0032097 value Today -1.

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#### 5.2.4. Journal and Account Rules

To ensure all journals are created to a similar set of rules and that system or account breaks are limited, the following rules outline how journals should be created and accounts kept in balance. Additional rules may need to be added during detailed specification writing and once system is live, so GCCM will need to allow input of new rules without significant down time.

Some of these rules imply clean-up processes that are either automated or manual should be in place.

##### 5.2.4.1. Rules for Journals

- Journals should contain one debit account and one credit account
- Journals should not cross legal entities; that is every journal should be entity specific.
- If one account is not known or not defined, then the journal should be created against the plug account for the entity of the known account.
- Journal sets for requests that move externally must include an account defined as an external real world nostro.
- Entries should be driven from real world nostro side wherever possible.
- Accounting entries should be retained for ten years (or greater depending on longest regulatory requirement<sup>8</sup>). In addition German regulations on retention of electronic accounting records offshore (from Germany) will need to be complied with.
- For entries that cross multiple intercompany accounts (say as a result of an internal payment between two entities) GCCM D&R will need to post intercompany entries in the Funding entities between multiple intercompany accounts. To do this it could either:
  - Direct between intercompany accounts in the Funding entity(ies)
  - Via wash account in each Funding entity that must zero at the end of the day

##### 5.2.4.2. Rules for Accounts

- Intercompany accounts should be in line
  - Balancing journals should always be created, mirroring movement, even if this creates plug entry in one of the entities. (That is debit in intercompany account between A and B in entity A, would be credit in intercompany account between A and B in entity B.)

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<sup>8</sup> Note the specified ten year requirement is based on German banking regulations

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- Plug accounts should be zero. To ensure this as part of the end / start of day process there will need to be reporting on postings to plug accounts, intercompany balance differences and position reconciliation with DBS to ensure that the sub-ledger integrity is maintained.
- If intercompany balances are not to be maintained on GCCM (say instead in TWS) intercompany accounts should zero every night through wash book process.
- A clean up process for retained earnings / P&L effects on Internal Business accounts should exist (see later)
- Book to statement differences should equal outstanding / unapplied items. Any differences should be reported and investigated.

To reduce the number of differences due to the practice of agent banks deducting charges on funds paid into nostro accounts, D&R should be able to identify such amount differences and post correcting journals automatically.

This is possible on SWIFT statements (*need to check confirmations do this as well?*) where it is usually to see reference to Original Currency Amount (OCM) where charges or an FX has occurred between the debiting of the counterparties account and the receipt applied to the beneficiary's account. Amount difference charges should be identifiable when the amount credited and the OCM are in the same currency and the difference between the two numbers is limited (say USD15 equivalent).

Amount difference journals should be created simultaneously with the posting of the credit for money that has been preadvised and then matched, with the preadvised / OCM passed to the Internal Business account, the nostro debited for the amount that came in and the charges account linked to the real world account debited for the charge amount.

If funds have not been preadvised, Treasury will not absorb charge and the amount received should be passed direct to the Internal Business account.

- Annually intercompany expense / interest should be cleared wherever possible
- All accounts should be set-up to post position deltas to DBS
- All accounts should be set-up to be sent to GSSR and only accounts not to be sent to GSSR should in theory be fee and external interest income and expense accounts. Therefore default will be to send accounts to GSSR unless users selects otherwise.
- GCCM should not be creating any FX exposure except for out of currency requests. Note these will need to be hedged within Treasury and therefore there needs to be a process to provide daily currency positions to the FX hedging process to include requirements in hedged positions. Once hedging has taken place the FX positions should be cleared down.

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#### **5.2.4.3. Rules for Entities**

- Entities should be authorised for currencies during set-up process.
- Creation of an entity in GCCM should cause the creation of
  - Intercompany account with Funding Entity in entity and Funding Entity
  - Intercompany interest expense and income accounts in entity and Funding Entity
  - Plug account in entity
  - Conversion account in entity

In all currencies authorised for the entity

- Adding a currency to an entity should cause the creation of
  - Currency intercompany account with Funding Entity in entity and Funding Entity
  - Currency intercompany interest expense and income accounts in entity and Funding Entity
  - Currency Plug account in entity
  - Currency Conversion account in entity

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#### **5.2.5. Process Name: Updates required after journal completed – Ref 1.5.1.9**

This section summaries the processes and entries that should be undertaken / passed per journal after the journal has been created:

##### **5.2.5.1. Update balances**

The journal creation should update the balances of the various accounts that have been touched by the request. (While requests should have been caused a balance change in a pending settlement status the balance should now be shown as confirmed.) These should be available via the web reporting tools.

##### **5.2.5.2. Update originating system**

Once the accounting has been created, the originator of the messages should be informed that this process was completed.

##### **5.2.5.3. Update Fee account**

This account will be used to recover the costs associated with the settlement of cash request by Treasury on behalf of the Firm. Once a request has been formally accounted for, it will be assumed to have been settled and at that point the fee tracking for the originating nostro should be updated for the request.

The account will not be debited; instead there should be a tracking of activity that will record the number and type of requests for an individual originating account.

Additional charges should also accrue for the processing of cancellation and amendments.

##### **5.2.5.4. Update Interest penalty account**

For requests received in GCCM D&R after the standard cut-off for a currency has been passed (i.e. a request that failed Funding Deadline) that were settled with the requested value date, the Internal Business accounts should have their linked interest penalty account debited for a fee which is based upon the size of the request.

Accounts that have an automatic exemption to the Funding Deadline check should not be charged a penalty.

The offsetting credit will go to the Funding / Paying entities late interest account. It is envisaged that the interest penalty account will role up a Treasury P&L account to offset cost of late funding.

These costs / earnings should be validated and approved before D&R posts the interest recoveries or credits. An appropriately authorised user should then be able to approve the interest recoveries or credits.



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It is likely that at least initially the actual posting of recoveries from the individual businesses may not be processed, however the functionality should still be built into system and user would simple reject recovery at this stage.

#### 5.2.5.4.1. Charge Calculation

The basic interest charge calculation is by currency and is

$(\text{Message amount} * \text{Penalty Spread} * \text{Part of Day(s)}) / (\text{Days per year for currency})$

- The default penalty spread should be a standard amount of basis points, though users should be able to override if required
- Part of Day would be the length of time the charge should be applied for. This would vary with the particular item and would be determined per item based on how long Treasury would expect to suffer a charge for the item. So for late funded items the timeframe would be to the next available value date that is yet to be funded (so next day for Euros after cut-offs) whereas items that caused the debit cap to be exceed would be charged only for part of the day.

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### **5.3. Daily Accounting Process – Ref 1.5.2 and 1.5.3**

This chapter details the account postings for DBS that will be generated within the in-house bank once a currency has closed for the day and certain of the control process required to ensure the integrity of the sub-ledger.

#### **5.3.1. Process Name: Morning reconciliation processes – Ref 1.5.2**

To maintain the integrity of GCCM as a sub-ledger, that is in line with the real-world and to ensure all the relevant journals have been passed within DBS, a series of automated reconciliation process should be developed. In particular GCCM D&R should receive and be compared with:

- A download of all external accounts from GSSR showing balances for each account and last statement dates.
- A download from DBS of balances for GCCM source code activity for all accounts that show a GCCM source code posting<sup>9</sup> or balance.

##### **5.3.1.1. GSSR Download – Ref 1.5.2.1**

To source the real world start of day balances for the accounts it hosts, GCCM D&R should receive at least one daily file of the account balances showing the last time a statement was received by GSSR. In practice it may be easier to receive files by currency to ensure accounts are updated in a timely manner (i.e. so JPY accounts on GCCM do not have to wait for USD account statements to arrive).

For each real world account in GCCM the latest balance should then be extracted and added to the records for that account within GCCM. GCCM should also store the latest statement date for each account and allow users to identify accounts where the statements are not current.

Note GSSR as currently set-up by Firm Balancing does not differentiate between Internal and External reconciliations and so:

- Cash Mgmt will either need to agree a process of flagging accounts on GSSR as internal and external as part of changes for GCCM with GSSR Technology
- or take all account balances from GSSR and extract the external accounts by comparing the balance list against a list of internal reconciliation pairs (not NWM database as yet) identifying non-real world accounts on GSSR.

Any unidentified accounts should be published to a user list for review. The CM users will then be responsible for setting up any new external accounts with the correct balance. The CM user should also be

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<sup>9</sup> Each system that posts to DBS is assigned a unique code to distinguish the source of the entries. This unique reference is called the source code. It is also understood that the system tracks the balances by source code and so it should be able to extract the balances for all GCCM activity easily.

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able to add accounts to the internal reconciliation list to be included in the review noted above and so ignored from future downloads from GSSR.

#### **5.3.1.2. DBS Download – Ref 1.5.2.2**

To ensure the internal integrity of the accounts it hosts, GCCM D&R should receive at least one daily file of the balances from DBS of accounts showing a GCCM source code entry.

For each account balances exported by DBS, the balance in DBS should be compared with the balance of the equivalent account in GCCM. Any balance discrepancies should be published to a user list for review.

Note that the process of comparing balances should allow for multiple accounts in GCCM posting / rolling up to one account in DBS, in which case the net sum of the GCCM balances should equal the DBS balance.

GCCM should check that it has no account with a balance that is not represented in DBS, unless that account has been specifically excluded from posting to DBS. Any accounts with a non-zero balance and activity on GCCM but not on DBS should be published to a user list for review.

GCCM should identify DBS accounts showing a balance created by GCCM that cannot be matched to a GCCM account. Any such accounts should be published to a user list for review.

#### **5.3.1.3. Plug and Suspense accounts – Ref 1.5.2.3**

Details should be published of all accounts in GCCM defined as plug or suspense that have a non-zero balance at the start of the business day for the currency of the account.

Note plug accounts should be cleared daily, so it would be useful to have aged analysis reporting included in the end / start of day process.

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### 5.3.2. Process Name: GCCM End of Day processes – Ref 1.5.3

Though GCCM is not to have a proper batch, certain processes will need to occur at the end of the business day as part of the transition to the next value date. The following section details the business events that need to occur; it is expected certain technology events will have to occur on a regularly / daily as well.

To allow for at least 24 by 6 (24 by 7 would be preferred as it avoids constrictions at each end from USD close Friday and reopen for Monday on Friday) processing it is suggested that at 'end of day' time is set for each currency and at the point this is reached the listed processes are undertaken for activity in the specific currency. (Currencies could be grouped or individually specified as opening 5 or 6 days.)

Note that for individual currencies the 'end of day' point will not always be midnight in the appropriate time zone, though this is a general default. Therefore the system will need to allow a user to define the end of day for a currency.

In particular the USD business day will need to end prior to midnight so that GCCM can ensure that it has the same value date as the FED, which can reopen for next day value at 9pm EST on the prior day.

These end-of-day processes should not take involve the system 'locking' or going down. Instead requests after the closing time has been reached should be processed on next available value date with back value if appropriate.

#### 5.3.2.1. Produce export for reconciliation and paper statements – Ref 1.5.3.1

To ensure that the Firm continues to operate in a controlled environment, both internal and external accounts will need to be reconciled. In particular for business lines that convert external accounts to Internal Business accounts with the in-house bank, GCCM needs to produce account history statements that can be used to reconcile trade postings against.

In order to send data to the Firm's reconciliation system and satisfy external reporting requirements, GCCM will need to be able to send data both to GSSR via electronic feed and also produce printable statements. These statements will not have to be printed daily and could be sent to an on-line storage area such as Infopac.

The statements should follow the layout of the MT940<sup>10</sup> but with additional data supplied that can either be read by GSSR or not. (It is likely that GSSR will not make use of the additional data straight away but will take it in over time.) In particular GCCM D&R should produce statement files with

- A breakdown of fields that would be concatenated for the MT940 Further information field

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<sup>10</sup> The statement format used should be the one that passes on the most information about the individual transactions as possible.

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- Any information supplied with the request from a source system

In fact GCCM should be able to create a fully formed MT940 that can be sent to Swift.

Paper statements should follow similar formatting rule but be formatted to print on standard header paper (note Lehman's default for headed paper is portrait).

#### 5.3.2.1.1. Example of MT940

Account Number 123-456789

Statement Number 102

Opening Balance: Euro (EUR) 6,723,495 (Credit)

The details of the transactions contained in the statement are as follows:

Transaction 1	Value Date: 13-05-2003	Debit: EUR 64.23
	Transaction Type: Cheque	
	Reference for the Account Owner: 78911	
	Reference: 123464	

Then closing balance info

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#### **5.3.2.2. GCCM D&R End of Day Account Posting – Ref 1.5.3.2**

While GCCM is not expected to have a traditional batch, certain activities will need to occur as part of the transition to a new business day including posting summary activity to DBS.

The system should complete the following steps to create the daily upload to DBS:

- Calculate position deltas for each account where the delta is defined as the prior end of day versus current end of day balance.
- Record differences in a file in DBS readable format
- Back-valued amendments should be processed with the value date appropriate for the entry and written to same file.
- The entries should then be passed to DBS and a copy of the file stored on-line.
- Entries should be posted in the currency of the account in D&R not converted to USD or the functional currency of the entity.

If possible GCCM D&R should make use of the DBS Sub-ledger process that is currently in design / technical specification.

##### **5.3.2.2.1. Effect of Back Valued Requests**

For accounting purposes, whether external or internal nostro accounts, GCCM should pass to DBS restated balances or amendments to incorporate back-valued request for requests back-valued less than five day.

For requests to a date no longer live in D&R the items should be posted into DBS with the value date of the oldest live date on D&R and the subsequent balances amended.

##### **5.3.2.2.2. Example**

For example assume today is Monday August 2<sup>nd</sup> and a payment is sent for value Thursday July 29<sup>th</sup> across an External Account.

For DBS send amendment to End of Day balance for value July 29 to incorporate principal  
Send amended Start and End of Day for value July 30<sup>th</sup>  
Send amended Start of Day for value August 2<sup>nd</sup>

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### 5.3.2.3. Intercompany Interest – Ref 1.5.3.3

This section outlines how GCCM D&R would take over the intercompany recover of the cost of funding payments and receipts on behalf of the business. The process outlined will need to be discussed with the Financial Controllers, ALM and Global Carry to ensure they agree change from TWS, etc.

The cost of funding the Firm's payment activity is claimed from business by charging debit interest to entities borrowing from Treasury, that is where the intercompany position is the Treasury entity's books is a debit. In turn credit interest is paid to entities by Treasury as an incentive to have entities return funds to the holding company.

The rates at which credit and debit interest is paid are set within ALM and the default rate is the Treasury Index rate. Currently the Index rate is 1 week LIBOR flat; reset daily and there is no difference between credit and debit rates, though GCCM will need to be able to allow different indices and a spread to be added to allow for future changes.

Interest is generally charged daily so that the standard period to be used in the interest calculation will be a single day or three days at the weekend.

Though the bulk of entities will earn or pay at the default Index rate over the standard period, CM Users should be able to include an alternate index for the calculation of intercompany interest and period at the set-up of the intercompany accounts for an entity.

#### 5.3.2.3.1. Intercompany Interest Calculation

The following steps briefly outline the process to calculate and post intercompany interest on a daily basis (for background consider the process followed within TWS). If possible intercompany interest should be calculated independently for each side of the intercompany relationship and the two numbers compared before the entries are posted.

The basic interest calculation for intercompany interest recovery is by currency and is

$$(\text{Intercompany position} * \text{Agreed Intercompany Rate for Position} * \text{Day Period Count}) / (\text{Days per year for currency})$$

- Where the intercompany position is as per recorded in the GCCM
- The default for Intercompany Rates will be the Credit / Debit Index rate:
  - Index rate is as defined by ALM and is generally a set percentage above 1 week LIBOR. As percentage changes occur over time this should be user definable.
  - It would also be useful to be able to define index to be used as well to allow for future changes.
- Any other rate to be used would be manually defined and should be included in set-up for the interest expense / earnings accounts for the intercompany position

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- Note at the moment the credit and debit index rates are the same but GCCM should apply the
  - credit rate to long balances with Treasury (i.e. where the intercompany position is the Treasury entity's books is a credit)
  - debit rate to short balances with Treasury (i.e. where the intercompany position is the Treasury entity's books is a debit)
- 'Day period / count' is the number of days since interest was last calculated
  - e.g. one day mid week, three days over normal weekend, two, three or four where a bank holiday occurs mid-week or attached to a weekend
  - Have to be mindful of split month end. If last day of the month is Saturday, for example, on Friday, then have to pass to DBS 2 days' worth of interest and hold onto Sunday's interest and post to DBS along with Monday's in the new month.
- 'Days per year for currency' is the market convention for the basis for interest rate. Should be set as part of the static data set-up for the currency
  - E.g. USD would be 360 and GBP 365

#### 5.3.2.3.2. Reconfirm prior days intercompany interest

To allow for back valuation of items into the live database, intercompany interest for the past four days should be calculated alongside the current day. Each day should be taken in turn, so that the effect of a change in the intercompany interest for one day can be followed through to its effect on the intercompany position for subsequent days.

Any differences between the posted interest and the recalculated interest should be posted. In this case a journal reversing the old amount should be created as well as a new posting with the new number. GCCM should retain the old number for historical purposes but use the recalculated position for future reporting.

#### 5.3.2.3.3. Post to intercompany position – Ref 1.5.3.4

Note as accounts are internalised the only way for business to pay the cost of funding is to borrow more from Treasury, therefore the recovery of interest by Treasury for funding a payment would be

- Debit i/co account in Treasury entity Credit interest earning for i/co

And to mirror this GCCM would also post

- Debit i/co expense in originating entity Credit i/co with Treasury

The effect of these entries on underlying accounts would then be posted through to DBS as part of all position changes reported to DBS



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5.3.2.3.4. Create GID posting file – Ref 1.5.3.6

To allow ALM to track Treasury P&L activity, GCCM D& R should create a daily update file for the GID / Debt Database to maintain integrity of Treasury P&L calculations. Detail of requirements should be available within Treasury Tech (position or transaction changes for intercompany accounts)

5.3.2.3.5. GCCM DBS Postings for Interest – Ref 1.5.3.5

The system should complete the following steps to create the daily interest upload to DBS:

- Calculate position deltas for each account as a result of the creating of intercompany interest journals where the delta is defined as the prior end of day (pre-interest calculation) versus the end of day balance including interest.
- Record differences in a file in DBS readable format
- Back-valued amendments should be processed with the value date appropriate for the entry and written to same file.
- The entries should then be passed to DBS and a copy of the file stored on-line.

This process could be merged with the general upload of data to DBS referenced above.

5.3.2.3.6. Effect of Split Month End

How to handle the impact caused by month end falling on a non-working day: **The following needs to be checked out with Financial Controllers.**

Essentially activity that relates to a month should be contained within the month, so where interest accruals would cross a month end, GCCM should process the interest up to the month and post this. Then as a separate entry process the interest from the start of the month up to the next value date.

The basic interest calculation for intercompany interest recovery is by currency and is

- $(\text{Intercompany position} * \text{Agreed Intercompany Rate for Position} * \text{Day count}) / (\text{Days per year for currency})$
- 'Day period / count' is the number of days since interest was last calculated
  - e.g. one day mid week, three days over normal weekend, two, three or four where a bank holiday occurs mid-week or attached to a weekend

Where month end falls on a working day this is simply the difference between the month end and the prior working day.

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For split month ends

The interest calculation has to be split as interest:

- up to the month end with the day count equal to the difference between the month end and the prior working day
- from the start of the month with the day count equal to the difference between the start of the month and the next working day

This may best be showed by an example:

This year Feb 04 was a split month end and so interest over weekend 27th Feb to 1<sup>st</sup> March would have been split as:

27<sup>th</sup> Feb to 29th Feb so day count is calculated as the difference between these dates

29<sup>th</sup> Feb to 1<sup>st</sup> March so day count is calculated as the difference between these dates

#### 5.3.2.3.7. Effect of Back Valued Requests

For accounting purposes, whether external or internal nostro accounts, GCCM will pass to DBS amendments to reflect the cumulative intercompany interest with the current day interest posting provided that it doesn't cross month/year.

If the back-valuation request crosses month or year end, then the intercompany interest recovery should be split and reported accordingly.

#### 5.3.2.3.8. Example

For example as before with reporting, assume today is Monday August 2, a payment came for back value to Thursday July 29 across an External Account.

For DBS send interest amendment for the three days' interest with value date of July 31 (29<sup>th</sup>, 30<sup>th</sup> and 31<sup>st</sup>) and send a second amendment for one day's interest (1<sup>st</sup>) with value date of today.

The effect of the recovery of the intercompany interest for the second should form part of the overall recovery for today.

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**5.3.2.4. GCCM D&R DBS Account Posting Reconciliation – Ref 1.5.3.8**

Once the activity file(s) showing changes in account positions have been sent to DBS for posting to the GL accounts, it is expected that DBS will acknowledge receipt of the file and also the successful or not posting of the various journals back to GCCM D&R.

D&R should take in these acknowledgements and reconcile the postings against the file of entries it has stored. Any discrepancies or failed postings should be reported to the users.

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#### 5.3.2.5. Core Static Updates

The system should update the following system settings and core static:

- Value date – this will be currency specific and it is possible that multiple value dates will co-exist within the system as today's date.
- Currency LIBOR rates (or Index rates)
- Escalation limits
- External Account information - details from NWM database of any new account openings or account closing. The records should be compared with external accounts set-up and changes flagged.
- Signatories' information - details from signatories database of any cancellations of authority for authorised signatory. The records should be compared with GCCM users and matches flagged.
- BIC and ABA Numbers files – daily refresh of tables stored in GCCM for validation purposes versus central source and updated versions loaded (Note sources maybe either internal BIC or external).
- Offline storage – should be updated with 'printed' statements (e.g. Infopac); copies of data sent to Frankfurt; back-up of records for BCP

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#### **5.4. *Month End Accounting processes – Ref 1.5.4***

Like the end of day process this section only defines business processes and does not touch upon IT driven processes that may need to be undertaken, though it is expected that some generic clean-up processes would be run including the archiving off-line of significantly older (for example greater than 24 months) data.

In particular it outlines processes to recovery payment charges (if this has not been done on a booking by booking process) and interest from the underlying Internal Business Accounts.

Note that these particular functions will need to be built into GCCM though they may not be switched on when GCCM goes live as the process is a departure from the current set-up. Therefore they will need to be agreed by all parties and this may be easier to do once all OTG systems are feeding GCCM.

##### **5.4.1. Create Month End statements for accounts**

As part of the month end processes once the month has closed (including for back valued items and in line with DBS) then a statement of activity should be generated for all accounts and sent to Infopac for record keeping.

In addition for specific accounts GCCM should be able to generate a month end statement showing all activity that can be sent out as a self contained record in a printable format.

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#### **5.4.2. Recovery Fees for D&R activity – Ref 1.5.4.1**

As part of GCCM's tracking of activity it will be recording the number and type of requests for an individual originating account. This record can then be used to calculate a cost for that activity to be passed to the individual business account to recover the expenses incurred for settling the individual requests.

Depending on the quality of the messages that have been sent to GCCM D&R, the business account should be debited with a combined cost for its STP and non-STP messages. The cost should be calculated as the sum of:

- the standard charge for a STP processed message times the number of such messages,
- the standard charge for internal processed messages times the number of such messages,
- the repair charge for a message that had failed one of the validation checks other than Funding Deadline check times the number of such messages.

These costs should only be posted if the flag at the Business Level allows D&R to posts the recoveries.

It is likely that at least initially the actual posting of recoveries from the individual businesses may not be processed, however the functionality should still be built into system and the flag to charge would simply be set to No recovery at this stage.

If the function is up and running, D&R should then create a series of journals to debit the individual Internal Business accounts.

The credit offsetting the above debit will go to the intercompany account with Funding / Paying entity that settled the messages on behalf of the originating business account. In turn a debit will be passed to the offsetting intercompany account and a credit to the Funding / Paying entity's fee recovery account. It is envisaged that the fee recovery accounts will roll up to a Treasury P&L linked to the agent bank fee line.

As with all entries, their effect should be passed to DBS and be included in the daily and monthly reporting.

#### **5.4.2.1. Report Fees – Ref 1.5.4.2**

Regardless of whether the authorised user rejects the recovery, D&R should still generate a report to be attached to the underlying Internal Business account that details what was or would have been charged. The report should detail the amounts to be reclaimed and the net effect showing the split between STP and non-STP messages.

If possible the report should separately detail the reasons why messages were classed as non-STP and the repair, so that the Operations settlement teams can improve their STP rates and reduce their costs.

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#### **5.4.3. Recovery Funding Expense for D&R activity – Ref 1.5.4.3**

To potentially bring further clarity to the Carry process, it is envisaged that GCCM D&R should include a process to recovery interest expense / allocate interest earnings within each of the non-Treasury entities on GCCM to the individual originating business accounts.

For this to work the interest recovery calculations described for the daily process for the intercompany account should be undertaken on each of the originating business and external accounts generating a Funding requirement (this would include Internal Business and Real World accounts) in the entity for the entire month's end of day balances. The net total of credit / debit interest for the balances on the account would then be the amount to be recovered / credited to the individual account.

Note for credit interest need to understand if GCCM D&R should be calculating withholding tax at all.

These costs should only be posted if the flag at the Business Level allows D&R to posts the recoveries.

It is likely that at least initially the actual posting of recoveries from the individual businesses may not be processed, however the functionality should still be built into system and the flag to charge would simply be set to No recovery at this stage.

If the function is up and running, D&R should then create a series of journals to debit or credit the individual Internal Business accounts with offsetting entries passed to the entity's intercompany interest fee or earnings accounts as appropriate.

As with all entries, their effect should be passed to DBS and be included in the daily and monthly reporting.

#### **5.4.3.1. Validate versus Daily Recovery from the Entity – Ref 1.5.4.4**

To ensure that Treasury is recovering the required amounts from the various businesses, after the recoveries for the Internal Business and other accounts in an entity have been calculated GCCM D&R should report the net recovery by account, the total across the accounts, the amount recovered through the month from the entity and the over or under recovery from the originating accounts. This report should be available for review by entity or across all entities.

Note that while credit and debit interest rates are equal, it should be that the net activity for all originating accounts in an entity should equal the amount recovered from the entity by Treasury.

#### **5.4.3.2. Report Recovery – Ref 1.5.4.5**

Regardless of whether the authorised user rejects the interest recovery or credit postings, D&R should still generate a report to be attached to the underlying Internal Business account that details what was or would have been charged. The report should detail the amounts to be reclaimed and the net effect showing the split between credit and debit interest for each of the day's balance.

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## 6. Other and Future Considerations including Ref 1.6

This chapter details a number of more general developments required as part of the build and areas for consideration for the implementation of D&R.

### 6.1. Glossary of Specific Terms

#### 6.1.1. Start and End of Day

Due to the international nature of the cash market and the Firm the start and end of day for a currency may not tie in with the formal close of the Firm's book and records for a particular value date. Therefore it is proposed that:

Currency or settlement start and end of day should refer to opening and closing of the main clearing system for the particular currency; for example the FedWire opening and closing times for USDs.

That is the default value date of the system should match that in operation for the currency clearing system. So JPY could be value tomorrow while USD was still today.

The system should also recognise a processing start and end of day for a currency for a particular value date that could be longer than the external opening; during this extended period messages could be received and internal requests settled.

The actual System start and end of day would parallel the opening and closing of a value date on DBS.

In summary:

- System date and time – tied to DBS and date will roll forward when DBS changes
- Currency value date – the value date for the currency in its major market
  - Closing times will be set to allow external activity to be processed and internal settlements to continue for a period after the market closes
  - Once the DBS postings have been generated the currency value date should roll forward. This may be independent of the system date move.
- Local time should refer should to adjusted time for the local user.

In addition there will exist:

- Funding deadlines – set and checked as part of STP engine; this will determine whether instruction can be effectively funded by Treasury
- Account specific deadlines – which will override the currency processing deadlines and restrict the time period instructions can be sent to the agent for the particular account.
- Note for both funding and account specific deadlines the restriction may not be for the current value date but may actually indicate value days forward as well.



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#### **6.1.1.1. Example**

For a example a local Japanese based user could send a USD payment to D&R at 8am local time with value date 14th September, that could be released externally from 10:30 local time though it is 13<sup>th</sup> September at 21:30 on DBS / D&R in New York and US (West coast) users or sources may still be requesting book to books / internal requests for value date 13th.

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### **6.1.2. GCCM D&R State Terms**

Term	Definition.
Rejected (Following Action System Reject)	Applied to messages that have been sent to the sent to the Gateway function so poorly formatted that it would be impossible to create a record from the data sent.
Requires Repair (Following Action Send to Repair)	Applied to messages that have been sent to D&R or manually input with sufficient data to create a record from the data but with some aspect that fails a user or STP engine requirement.

### **6.1.3. GCCM D&R Terminology**

Term	Definition.
Business Account	Accounts used by business for ledger postings (i.e. ledger); could actually represent Control / Dummy nostro account or real world account
Internal Business Account	Business Account that has no real world equivalent; i.e. a Control / Dummy nostro account

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## **6.2. GMC – Generic Messaging Component**

Strategically the Firm has decided to create a series of generic application and messages processing interfaces, to be referred to as the Generic Messaging Component (GMC), between its various system layers to minimise the disruption of a change in either an internal system or external messaging format.

The process of creating the GMC has begun with the implementation of a SwiftNet compliant platform for messaging with Swift that will be used to retire MERVA. Over time it is expected that additional external communication processes / channels will migrate onto the GMC, with the GMC accepting standard formatted messages that will be translated into the appropriate format for the external processes or channel.

Eventually the GMC will be used to create standard interfaces between the Firm's trading and settlement systems to allow these to be upgraded independently of each other.

As a result GCCM will be expected to communicate directly with GMC for SWIFT messaging as part of its Phase One implementation.

Moreover GMC offers the opportunity to expand the interfaces available to GCCM more readily by leveraging the translation engines imbedded in GMC to allow GCCM to create standard Swift formatted cash messages that are transformed within GMC to alternative formats including batch files.

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**6.3. *Month end integrity 1.6.1***

AS D&R is acting as a sub-ledger for cash activity, it is assumed that it will need to be validated against external and DBS records as part of the month-end processes undertaken within Finance.

At the current time it is not clear how significant this process will be and whether the daily reconciliations cover the requirements. To be discussed with Financial Controllers.

The system should also run through a number of checks to clear memory caches, etc. to ensure the system maintains peak performance.

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#### **6.4. Archiving – Ref 1.6.2**

D&R should retain 25 months worth of data on-line in its historical database. As part of the month end integrity processes, D&R should clear out and archive a month's worth of data to maintain a rolling database of 25 months.

The archived data should be securely stored in line with Firm and Regulator requirements for accounting records.

In addition for the month that is archived a summary of the traffic that has passed through the system should be created and stored in a distinct database available to a limited number of users. This distinct database should grow as data is added and act as an on-line repository for all of the messages that have passed through GCCM D&R.

The users should be able to query / search for payment, receipt and account data in this separate database and users should be able to copy data from the database to circulate search results to a wider audience.

Copies of all data including back-ups and archives should be retained for at least a period that complies with the most stringent requirements imposed on the Firm globally from a regulatory body. Currently this is believed to be ten years for Germany.

##### **6.4.1. Frankfurt Archive**

A copy of the month archive should be passed to Frankfurt once the monthly archive process is complete to ensure compliance with BAFIN regulations.

This is in addition to supplying a copy of all live data records (live and on-line history) to a back-up server in Frankfurt.

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### **6.5. *Retained Earnings and Automated clearing of accounts – Ref 1.6.3***

To ensure that the Internal Business accounts hosted by the system do not accrue large unexplainable balances due to the cumulative effect of historic activity, there will need to be a process to clear down the internal accounts in D&R and the offsetting accounts in the Settlement Sub-ledgers. The process can be thought of as a semi-automated retained earnings process, which would clear certain balance sheet / P&L accounts to a pre-defined set of retained earnings / P&L accounts by entity as part of year end closing.

For each Internal Business account the balance on GCCM D&R should be compared with the balance of the Settlement system that has the offsetting entries for the payment activity. After allowing for any cash reconciliation breaks due to cash activity either not in D&R or not in the Settlement system, the balance should be cleared to a conversion / retained earnings account in both systems, leaving both accounts with a zero balance except for the reconciliation breaks.

Across an entity in D&R the process is essentially a series of internal payments to / from the retained earnings account for the entity to the short / long accounts that have balances that need to be cleared. The effect of the resultant entries should be posted to DBS as part of the normal overnight postings. Even if the above process is not fully automatic, any automation may help in later years as the number of Internal Business accounts on GCCM D&R increases.

The process should run at year-end and each time will need to be discussed with the Financial Controllers to ensure corresponding entries are passed in the Settlement systems simultaneously. In fact it should be possible for the Settlement system to generate the requests for these internal payments and to send them to D&R.

A similar clear up process should be followed within the Treasury entities for the interest accounts (internal intercompany and external) and fee accounts on an annual basis.

Note GCCM will need to be flexible enough to run the process at various times for specified entities, to allow for different year ends, and even on a limited number of accounts within an entity, to allow for co-ordination with the Controllers and Settlement systems. Accounts that need to go through the process will need to be identified as they are set up (defaults may exist but we will need to think what these are in advance).

As part of the review of process it would be worthwhile investigating how the ITS retained earnings process works for comparison with the below.

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## 6.6. Recovery Requirements

All applications in the Lehman business environment are assigned a tier rating for purposes of business continuity. The most critical business tier rating of 1 is reserved for applications which perform any of the following mission critical business functions: funding, clearing and settlement, position management, risk management, and order management (only to the extent of processing existing orders, not to accept new ones)<sup>11</sup>. These are the functions required to close out a business day in the event of incident to keep the Firm afloat without any reputation loss.

Because of its participation in the funding process, GCCM is considered at the least a Tier 1 application.

The characteristics of a Tier 1 application are as follows:

- Must be recoverable to an alternate data center and be rendered operational in 4 hours or less
- “Operational” means that the critical business functions are available, not necessarily that all application functions are restored to the exact SLA as in normal production mode
- All data must be recovered to point of failure
- Other recoverability criteria must also be met:
  - Production code must be stored in a central source code repository
  - Production jobs must be run out of a central scheduler
  - Data must be mirrored in a data center other than where the primary production instance resides
  - Application must have a TAP failover script created and must undergo TAP failover prior to rollout and retesting every 6 months
  - The application must be registered in ADb with a DR instance representing the failover scenario for each production instance

### 6.6.1. Scenario Specific Recovery timeframes

However the requirement of 4 hours should be seen as extreme and instead the system should be designed:

- for instant fail over for a number of scenarios
- under 1 hour recovery for most other scenarios

Specifically the following scenarios should be covered

#### 6.6.1.1. No evacuation of building

- Limited problems, specifically issues with user access servers - instant failover
- Middleware issues - instant failover
- Application as opposed to server hardware issues - within 30 mins; no more than 1 hour with no loss of data

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<sup>11</sup> Any questions relating to application recovery requirements or exceptions should be directed to the Business Continuity Management team (BCM)

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- Primary machine failure - secondary server on line with minimal disruption in no more than 1 hour with no loss of data

#### **6.6.1.2. Evacuation of building but data centre not effected**

- Reconnect directly from back-up location or other CCM site can take up processing

#### **6.6.1.3. Data centre in region effected**

- No more than 1 hour alternate data centre (in separate region) can take up processing
- Frankfurt copy of database & application acts as tertiary back-up for complete rebuild - potential loss of activity from day.



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## **6.7. Business Rule Control**

A number of the controls and choices implicit in the functioning of GCCM D&R are dependent on a number of business rules that are used to determine defaults and overrides for messaging. These rules will be key controls and as such will require a process to manage their change and implementation to prevent ad-hoc changes disrupting flows through the system.

The process of rule change should include a proposal stage, user acceptance testing to ensure changes satisfy requirements, verifiable regression testing to ensure changes do not effect existing rule-set unintentionally and audited implantation.

Moreover this change process should be available to a control group of users rather than being a Technology driven process; i.e. users can set-up and test without significant technology resource.

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## **6.8. *Regional Specific Issues***

### **6.8.1. Frankfurt**

#### **6.8.1.1. BAFin Cross-Border electronic Processing**

GCCM should be developed to comply with the Germany Banking Regulators, BAFin, Pronouncement of October 16, 1992 on the Employment of Cross-Border Electronic Data Processing Facilities for Bank Accounting Purposes that details the requirements for German banks to operate on systems hosted outside of Germany. The pronouncement details 17 rules that should be complied with.

Of key consideration is the twenty four rule, which is understood can be complied with by sending a copy of the database to Frankfurt each night. This remote server can also act as a tertiary back-up service for the system, should both primary and back-up servers fail.

A copy of the rules is available on request.

#### **6.8.1.2. AWV Reporting**

Once GCCM D&R is live it should be possible to migrate the current AWV reporting into the D&R reporting suite on the assumption that D&R should be responsible for all such activity.

The AWV reporting is understood to be the requirement to report all cash payments above a certain threshold from or on behalf of a German bank or institution to a non German resident institution or individual.

The report is currently collated from manually from multiple sources

A copy of the requirement is available on request.

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### **6.8.2. Tokyo**

To create a straight through processing environment based around Swift standards and western characters rather than the use of stand alone applications in kanji, Tokyo Treasury have been migrating their JPY nostro accounts to support Swift Zengi formatting.

The translation process necessary to send Swift messages under the Zengi set-up should be built into the definition of the nostro accounts and message creation.

Specific definitions are available from Tokyo Treasury and Treasury Technology.

#### **6.8.2.1. Japanese Domestic Payments**

Currently Japanese domestic payments are made by Tokyo Cash Management through a variety of agent bank supplied proprietary links that support kanji characters.

Though Tokyo Cash Management are migrating certain of these accounts to Swift Zengi and so the accounts can be managed using the Firm's existing SWIFT infrastructure and Roman characters, it is expected that a number of accounts will not migrate.

Instead as part of the development of GCCM D&R, at least one payment channel that supports kanji characters will have to be integrated with the basic platform. At the moment it is not clear if any of the kanji based systems can translate a roman character based payment into the required format for release to the agent bank or whether D&R itself would have to undertake this translation.

Further analysis will be required to understand the functionality of the existing proprietary links and any alternate payment engines available for Japan.

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### **6.8.3. New York**

As common with other US institutions, New York has a high volume of cheque processing and it would be worthwhile to centralise this processing via D&R.

It is probably that additional information may be required for cheques, such as recipients address that it maybe worthwhile adding into the definition for individual payment requests from the initiation of the project even while the cheque writing software to be used is to be determined.

One option to be considered is the outsourcing of the cheque issuance and dispatching to a third party where GCCM D&R is just required to deliver a file of the relevant details to the third party. In this case GCCM D&R may be able to use the batch writing process to create a file that is transmitted electronically without having to define an additional specific payment channel for cheques.

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## **6.9. Upgrades**

The development of D&R has been limited at this stage to key functionality though already a number of further requirements have been identified. This sections summaries these so that the system can be built to allow for them and further work into the detailed requirements for each will be undertaken during the technical and build phases of D&R.

### **6.9.1. General**

The system should be hosted so that capacity for the system can cope with a significant increase in activity for a limited time (as short as one day) and be easily increased without creating an expense bottle neck and. In particular there should be the ability to expand system resource without having to go through a process of gaining approval for a new server / box each time.

Therefore as part of the technical specification, it will be worthwhile considering how to build the system so that new resources can be assigned to the processing application and database from a server farm on a real-time basis.

### **6.9.2. Upgrades for Payment STP Engine**

#### **6.9.2.1. Formatting**

The current simple payment formatting checks to be replaced by more sophisticated checks that will allow for regional, country and even agent bank specific requirements for STP messaging

- Incorporate CCM input funding requirements into the deadline checking process as a second level of funding deadlines
- Validation of key local clearing codes
  - Sort codes
  - Fed wire codes
  - BLZ codes
- Ensuring market developments or practise that effect STP can be incorporated: For example
  - Non Swiss domiciled members of CHF clearing system
  - Local clearing of USD in Hong Kong
  - Euro clearing via UK
  - Internal transfers within one bank / branch
- Beneficiary account field - ability to add to current list of restricted strings - For example Claims Tracking enter a full stop in this field when they have no account number to quote.

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6.9.2.1.1. Agent specific formatting

Certain of the Firm's nostro Agents impose their own STP requirements that exceed the basic SWIFT requirements for payments sent to them. The following section shows summary requirements for Deutsche Bank who are LBHI UK Branch's current Euro agent.

6.9.2.1.1.1. Deutsche's STP requirements for MT2xx and MT103 payments

Hereafter please find the description of Deutsche Bank Germany's straightthrough-processing requirements in detail. Payment instructions not meeting these STP requirements are considered as repair items.

MT103 (customer payments)

A S.W.I.F.T. MT100/103 payment order is considered as "straight-through" if the below criteria are fulfilled:

- Bank fields 52, 54, 55, 56 should only be present in S.W.I.F.T.-option "A";
- Whilst we prefer to receive field 57 in S.W.I.F.T.-option "A", we still accept field 57 in S.W.I.F.T.-option "D" without counting a repair if a correctly formatted national clearing system identifier and code is used (as far as they are quoted in the S.W.I.F.T. standard field definitions);
- Other than field 57, S.W.I.F.T.-option "D" should not be used in any fields (including field 53);
- Field 72 and Field 23E should not be used. Codewords for a special service bilaterally agreed with Deutsche Bank will however not be counted as repair;
- Mandatory fields are used in line with S.W.I.F.T. guidelines. Example: Field 57a is mandatory if different from the receiver, even if field 59 contains an IBAN.

MT20x (bank-to-bank payments)

A S.W.I.F.T. MT20x payment order is considered as "straight-through" if the below criteria are fulfilled:

- Bank fields 52, 54, 56, 57 and 58 should only be present in S.W.I.F.T. option "A";
- Field 53 is blank.
  - Only if the sender maintains more than one account with Deutsche Bank Frankfurt in the same denomination, or instructs Deutsche Bank Frankfurt to debit an account of another bank (for which an authorisation of this bank is needed), he should use field 53 and will need to state the number of the account to be debited in S.W.I.F.T.-option "A" or "B".  
Example: F53: /account number S.W.I.F.T. BIC
- Field 72 should not be used.
  - The codewords "/BNF/" (information for the beneficiary), "/OCMT/" and bilaterally agreed codewords (e.g. "/CLSTIME/") will however not be counted as repair.

As of March 2003

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#### **6.9.2.2. Payment Channels**

The creation of links to additional payment channels including

- Cheque writing link
- Fed Wire link via LB Bank for self-clearing of USD payments
- ABK link or internalise Bankhaus connectivity for self-clearing of Euro payments
- ACH links for US and UK

#### **6.9.2.3. Intraday**

Better intra day management with links to the daylight overdraft process (to be developed separately) and back to an enhanced automated funding and release process

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## **6.10. Potential Impact of GCCM D&R on Other Groups**

Rather than try and detail the impact of GCCM D&R on every area, the following lists outline items that should be addressed as part of the review of GCCM D&R with the named groups.

### **6.10.1. Operations & OTG**

- Ability to fundamental re-organise inefficient flows.
  - No longer routing traffic through FPS and other system bridges
  - Separating entities - taking LBSF & LBCC out of LBI accounts, LBF out of LBIE dummy nostros
  - Centralising and automating account funding
  - Creation of debit cap monitoring for unsecured 'free' cash intraday positions
  - Accounts hosted on GCCM - supply of data
  - Increased 'cash' settlement of securities trades / limiting direct journals between accounts to control intercompany positions
  - Internalising of flows (MTS to TMS payments) and moving away from intersystem bridge accounts
- Boundaries of Ops and CCM
  - Repair handling; who will be responsible for STP repairs
  - Manual and system payment input and responsibilities;
- IT work
  - FPS and other system retirement
  - Impact of GMC / MINT and any other major OTG IT plans
  - Resourcing of OTG work; GCCM to be classed as Firm mandatory event
- Reconciliation
  - Internalising of accounts; closing external accounts but instead unlimited internal accounts
  - Claiming of funds; less accounts more concentration and automating process to apply funds
  - Moving accounting entries from ITS in Europe / Asia
- Opportunity to develop new functionality - ability to pass more detailed information on payment / incoming funds through to clients
- SEI - Bond STP reorganisation



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**6.10.2. Finance Accounting / Regulatory / Carry**

- Internalising of accounts how does this impact each of these groups:
  - Unregulated entities
  - Regulated entities US, Europe, Asia
  - Real world cash flow requirements
- Intercompany position monitoring in real time, how can this be leveraged?
  - Could force increased 'cash' settlement of securities trades / limiting direct journals between accounts to control intercompany positions
  - Internalising of flows (MTS to TMS payments) and moving away from intersystem bridge accounts
- Carry charging and recover through GCCM; complete change to current model, would it be better?
- Management of accounting processes in GCCM; who is responsible for the sub-ledger integrity as it is multi-entity
- Moving accounting entries from ITS in Europe / Asia; how does this effect Product Control

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## 7. Legal, Compliance, and Regulatory Issues

Ref	Description	Priority
6.1	The back-up tapes should be stored and retained for at least ten years or what ever the current recommendation is for financial records issued by Internal Audit. (Ten years meets German regulations.)	M
6.2	Access to each entity should be restricted at the user level.	H
6.3	Message transfer (including screen input to database activity) should be encrypted	H
6.4	Compliance with German regulations on the use of non German hosted systems	H
6.5	Individual requests to be further encrypted to prevent identification of beneficiary; particularly required if payroll activity is migrated onto system	H

## 8. Assumptions, Risks, and Dependencies

## 9. Performance Requirements

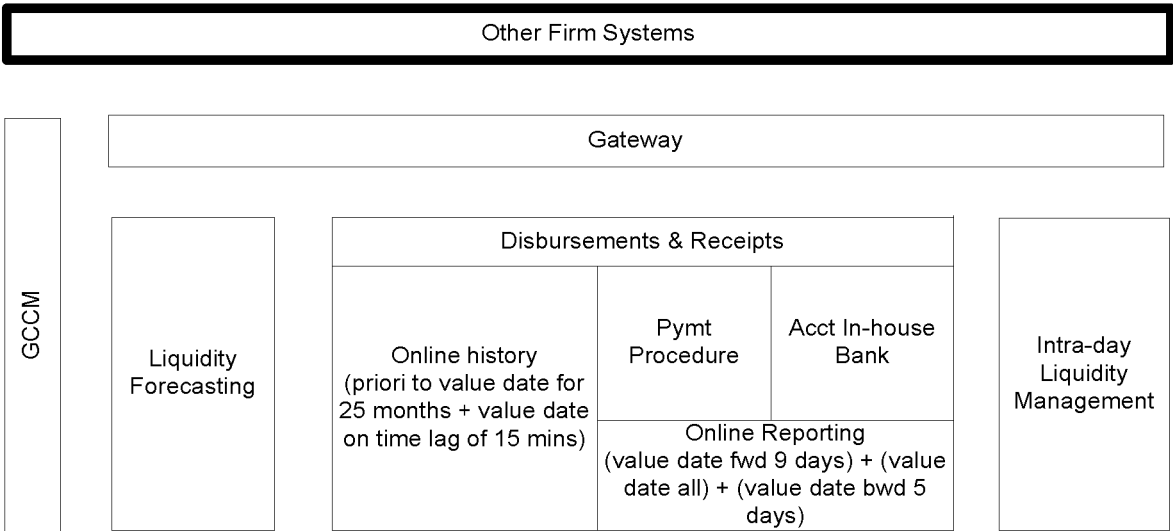
Ref	Description	Priority
8.1	Operating 24 by 7	M
8.2	Operating 24 by 6	H
8.3	No noticeable system screen latency in Tokyo, Frankfurt, London and New York	H
8.4	200,000 external movements per day	H
8.5	500,000 internal movements per day	M
8.6	Database replication to a DR served based in Frankfurt should occur nightly	H

- Performance issues, slow down in processing times - additional capacity available to be brought on stream by tech within 30 mins

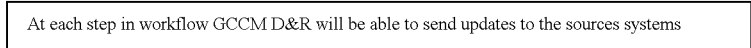
10. Appendices

10.1. Workflow model for GCCM.

10.1.1. Overview of GCCM



## Diagram of Payment Engine



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**10.1.2.1. Initial Suggested Statuses for Payment Engine**

As a payment/receipt request is processed by GCCM, the status of the item at every stage will be transmitted back to the originating source system or the individual. The following details the validations and the status at each stage from input to the release of the payment.

WEB Based	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
Manual Input	Save as 'Provisional Status'	Account	Pass			Provisional	
			Fail			Repair Required	
		CCY	Pass				
			Fail			Repair Required	
	Save as 'Input Complete'			Start looking for GARM and lookup SSI		Assign SSIs	
		Garm Id field not blank and validate	Pass			Pending Approval	
		Garm Id is blank	Fail			Assign SSIs	
	Cancel					Pending Cancellation	
	Cancel (Approved)					Cancelled	
	Repair					Provisional	
Approval stage	Save as '1 <sup>st</sup> Stage Approval Status					1 <sup>st</sup> Stage Approved	
	Repair					Provisional	
	Cancel					Pending Cancellation	
	Cancel (Approved)					Cancelled	
	Save as '2nd Stage Approval Status					2nd Stage Approved	
	Repair					Provisional	

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WEB Based	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
							fix request
	Cancel					Pending Cancellation	
	Cancel(Approved)					Cancelled	
	Save as '3rd Stage Approval Status			Auto Move to GATEWAY		3rd Stage Approved	
	Repair					Provisional	Originator has to fix request
	Cancel					Pending Cancellation	
	Cancel(Approved)					Cancelled	
Gateway		Required data elements	Pass	Send to Import			
			Fail	Send error message back to originating system or originator of request			
		Optional data elements	Pass	Send to Import			
Import		Simple Check	Pass	Generate unique ref and send status back to originator		Pending Processing	
			Fail	Generate unique ref and Send Error Message back to originator		Pending Amendment	Fix and send back with unique ref
		Complex Check	Pass	Generate unique ref and send status back to originator		Pending Processing	
			Fail	Generate unique ref and Send Error Message back to originator		Pending Amendment	Fix and send back with unique ref
<b>Validation</b>							
Data Integrity		1. Invalid Beneficiary 2. Invalid GARM id or no SSI's	Pass (NO)	Continue with remaining validation checks	Pass Data Integrity	<i>No Need to Publish</i>	

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WEB Based	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
		3. Invalid CCY calendar for CCY 4. Invalid CCY 5. Amount is zero	Fail (YES)	Send error back to originator of request or originating system with unique id	Fail Data Integrity	Pending Amendment	Originator to fix and send back
Payment Quality Check		1. Invalid BIC codes 2. If BIC not present, check for valid clearing codes 3. If 'account with bank' is blank or not Swift code??	Pass (NO)	Continue with remaining validation checks	Pass Payment Quality	<i>No Need to Publish</i>	
			Fail (YES)	Send error back to originator of request or originating system with unique id	Fail Payment Quality	Pending Amendment	Originator to fix and send back
Escalation (Approval at account level or business line still has to be determined)		Request - Internal	Pass/ Fail	Continue with remaining validation checks	Pass Escalation	<i>No Need to Publish</i>	
		Request - External at account level	Pass	Continue with remaining validation checks	Pass Escalation	<i>No Need to Publish</i>	
			Fail	Suspend all payments and postings	Fail Escalation	Pending CCM approval	CCM Approval Required
					Pass Escalation	<i>No Need to Publish</i>	CCM Approved
		Request - External at Business Line Level	Pass	Continue with remaining validation checks	Pass Escalation	<i>No Need to Publish</i>	
			Fail	Suspend all payments and postings	Fail Escalation	Pending CCM approval	CCM Approval Required
					Pass Escalation	<i>No Need to Publish</i>	CCM Approved
Compliance Checking		1. Is it a restricted country	Pass (NO)	Continue with remaining validation checks	Pass Compliance	<i>No Need to Publish</i>	
		2. Is currency restricted 3. Is institution a casino or money exchange 4. Is travel rule complete 5. Others (to be enumerated elsewhere)	Fail (Yes)	Suspend all payments and postings		Pending CCM/CAD Approval	CAD Approval  CCM Approval

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WEB Based	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
					Pass Compliance	<i>No Need to Publish</i>	CAD/CCM Approved
Funding Deadline		By currency validate receipt time of request to the cut-off time table; check if business account is on the override cut-off	Pass	Go check value date Continue checking other validations	Pass Funding cut- off	<i>No Need to Publish</i>	
			Fail	Send errors back to originator of request or originating system	Fail funding cut-off	Past cut-off time	
		Check value date and if it is Back-value	Pass (NO)		Pass Funding cut- off	<i>No Need to Publish</i>	
			Fail (YES)	Send notice back requesting approval	Fail funding cut-off	Pending Approval	Approval from originator; continue with other validations
					Pass Funding cut- off	Pending CCM Approval	Originator Approval received; CCM approval required
<b><i>Pending Amendment s</i></b>							
	Cancel			Wait for confirmation of cancellation		Pending Amendment	
	Confirm Cancellation			For details, see BRD		Cancellation Confirmed	
	Reject Cancellation			Proceed as normal		Rejected Cancellation	
	Amend					Pending Amendment	Make amendments and save amendments
	Confirm Amendment			See BRD for details		Amendment Confirmed	
	Reject Amendment			Proceed as normal		Rejected Amendments	



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WEB Based	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
<b><i>All Fails Fixed</i></b>							
		Validate at point of failure again		<b><i>When fails are fixed and resubmitted</i></b>			
			<b><i>Pass all validati ons</i></b>	<b><i>Pass to Funding and Outgoing</i></b>		Pending Assignment of External Account	
<b><i>Funding</i></b>							
Identify Real World Nostro Account				RW Nostro Account identified		Pending Message Generation	
<b><i>Outgoing</i></b>							
Intraday Release	User select items for Netting or Split				Pending Netting/Split	Pending Release	
	<i>Netting</i>			Perform Netting	Netted	Netted	If user wants to Un-net
	<i>Un Netting</i>			Remove net id		Pending Release	
	Release – Manual or Auto			Perform the release of payments		Payment Sent	
Matching				<i>Every item will be unmatched</i>	Unmatched		
		Auto Match	Pass	Process Accounting, associated funding and settlement or request. Send status message back to originator		Settled	
			Fail	Send to Unapplied Queue		Unmatched	
			Pass	Process Accounting,	Manual Match	Settled	

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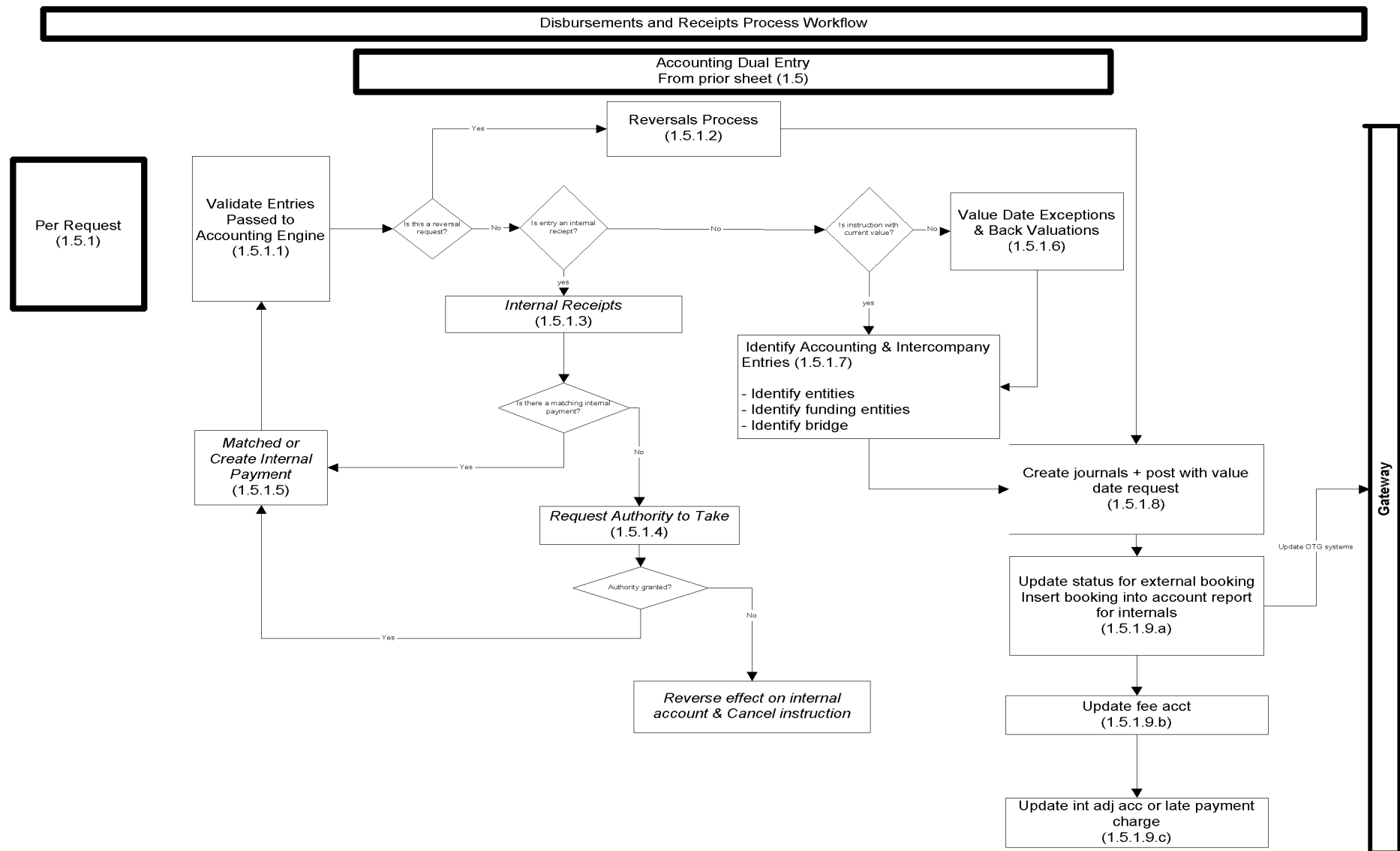
WEB Based	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
		Manual Match		associated funding and settlement or request. Send status message back to originator			
			Fail	Send to Unapplied Queue		Unmatched	
	If previously matched, and then unmatched			Reverse any accounting and place in pending queue.		Unmatched	
	Applied/Unapplied Funds user selects items to create GCCM records		Pass	Process accounting for the control account, suspense. Send 'Settled message back to originator'	Manual created entries	Settled	
<b>After Release</b>							
MINT or SWIFT				Store with the related payment request	ACK received; NAK received		
Bank Confirmation				<i>Every payment sent would have awaiting confirmation</i>		Awaiting Confirmation from bank	
		900 and 910 received	Pass (MATCH)			Confirmation Received from bank	
			Fail (NO MATCH)			Awaiting Confirmation from bank	

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### 10.1.3. Overview of Accounting

#### 10.1.3.1. Diagram of Accounting per Request



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**10.1.3.2. Initial Suggested Statuses for Accounting Per Request**

During the accounting processing, there will be validations performed and each status must be retained. The following details the validations and the status at each stage from input to the release of the payment.

Accounting	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
Identify Funding Relationship		Legal entity of debit account = Legal entity of credit account		One journal, a debit and credit entry, with the same legal entity.		Journals Created	
		Legal entity of debit account ◇ legal entity of credit account		Create journals, minimum of 3 with potential maxium of 4		Journals Created	
		Funding entity of debit account = Funding entity of credit account					
		Legal entity of debit account ◇ legal entity of credit account		Use the real world account/debit account to identify Funding entity. Go thru Funding entity relationship entity to get pair off with Funding entity for internal or credit account		Journals Created	
		Funding entity of debit account ◇ Funding entity of credit account		Create journals, minimum of 4 and max of 6			
			Failed	After going thru the entity relationship for the debit account and no DBS accounts found	Funding Entity missing	Funding Bridge Not Found	User to update the account static table. Resubmit for accounting entries
Payments		Business Account or Real World Nostro Account	Pass		Accounting Statics Passed		
			Fail	Send to Accounting Repair Queue	Accounting Statics Failed	Insufficient accounting data	<ul style="list-style-type: none"> <li>Add/modify missing account to account static</li> </ul>

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Accounting	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
							<ul style="list-style-type: none"> <li>table.</li> <li>Use screen to change in accounting repair queue and resubmit for accounting.</li> </ul>
		Value Date = current date but currency is a Holiday		Process with value date requested on payment instruction			
		Value Date < than current date and currency is not a Holiday of currency		Flag as backvalue if not done previously.  Restate balances and calculate BV interest expense			
		Currency of payment = currency of account			Accounting currency Passed		
		Currency of payment <> currency of account		Flag currency not same as account  This will be used for the FX piece of accounting			
Internal Receipts		Check the credit account(?) to see whether there is an offsetting entry	Pass (Yes)	Link the 2			
			Fail (No)	Check if the debit account is on the pre-advice and there is offsetting entry	Link the 2		
				Debit Account on preadvice but NO offsetting entry		Awaiting debit entry approval	CCM emails owner to request authorization to pass debit entry to account
	Authorization received			<ul style="list-style-type: none"> <li>Create the payment and accounting entries</li> <li>Link the 2</li> </ul>			
	Reject			Do nothing			
				Debit Account NOT on			CCM emails the credit

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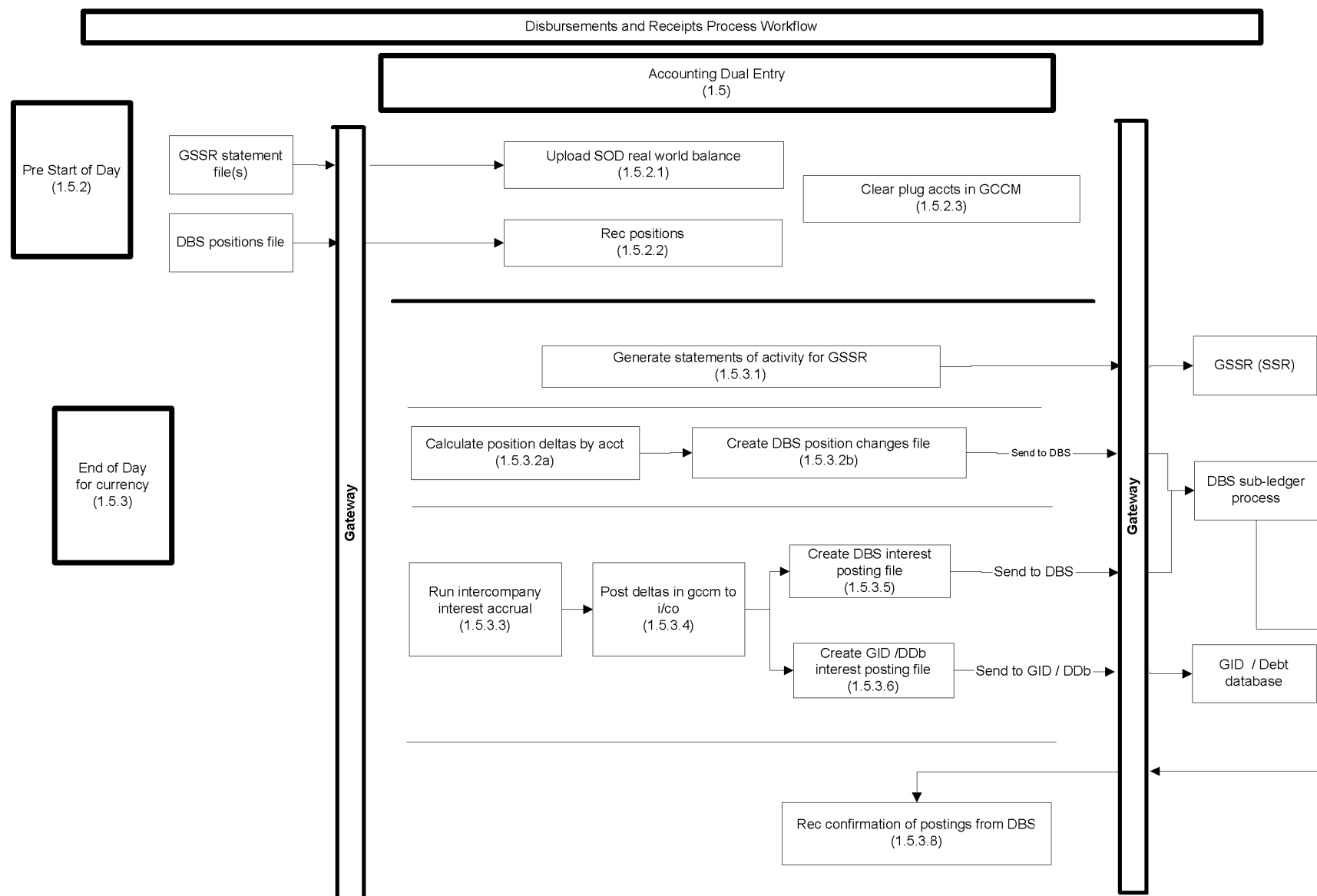
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Accounting	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
				pre-advice			account owner to request entry to be resubmitted  When resubmitted; mark OLD delete and just use the NEW??  Sounds reasonable so yes
All Failed Accounting						Pending Accounting Amendments	
	Amend account numbers	Re-validate	Pass	Move to create accounting entries		Accounting Passed	
			Fail			Pending Accounting Amendments	Fix and resubmit
	Resubmit to Accounting	Re-validate	Pass	Move to create account entries			
			Fail			Pending Accounting Amendments	Fix and resubmit
UPDATE Balances						Accounting posted	

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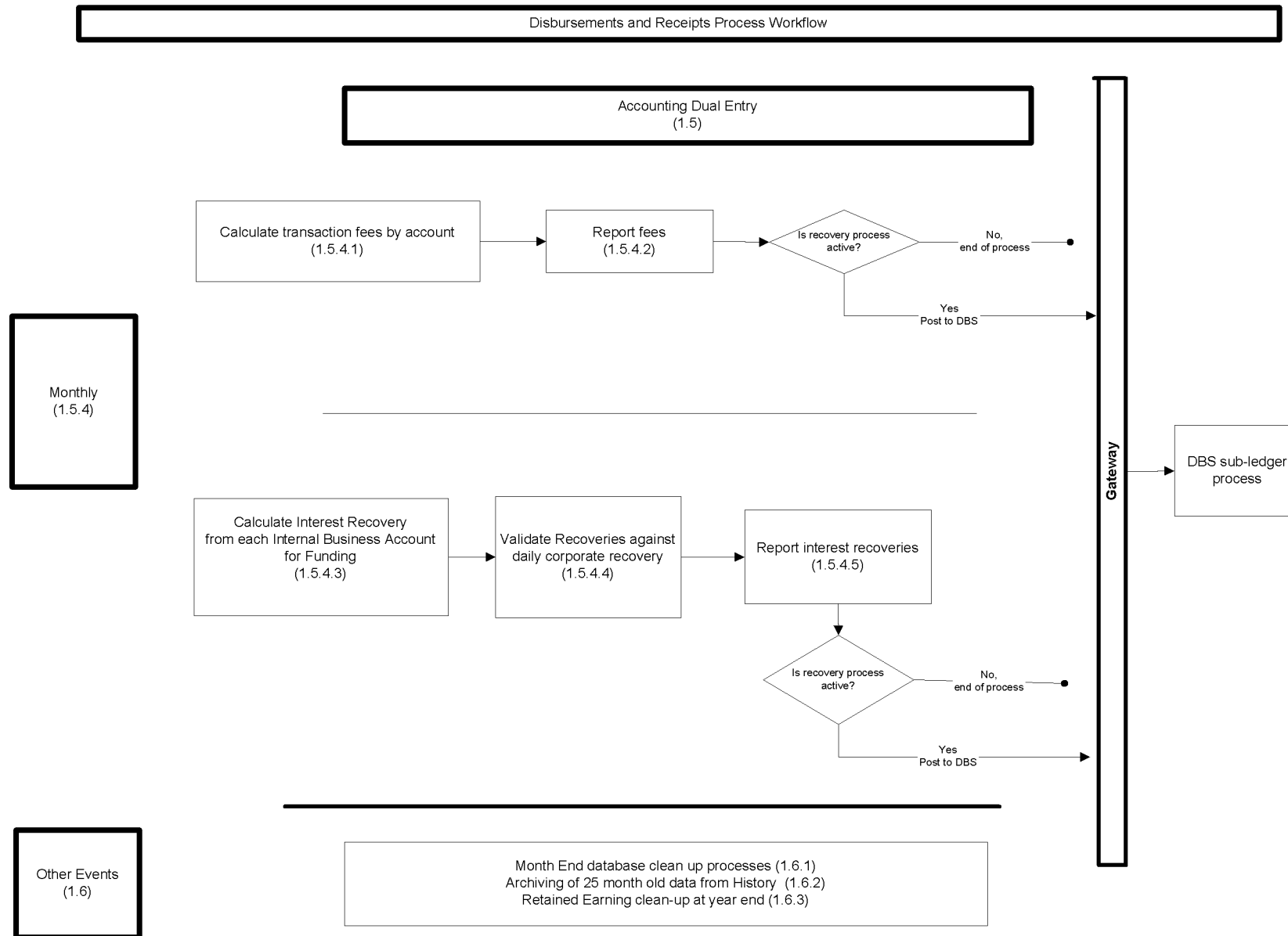
### 10.1.3.3. Diagram of End of Day Accounting and Start of Day Reconciliation



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### 10.1.3.4. Diagram of End of Month Processes





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## 10.2. Accounting Examples

### 10.2.1. Payment on Behalf of Business – LBHI for LBSF

LBSF		LBHI	
ASAP / ITS	GCCM		Real World Agent Bank for LBHI
P&L in LBSF	LBSF Intercompany with LBHI	LBHI Nostro	
Dr   Cr	Dr   Cr	Dr   Cr	Dr   Cr
100 (a)	100 (b1)	100 (b1)	100 (b2)
LBSF Internal Business Account	LBSF Internal Business Account	LBHI Intercompany with LCPI	
Dr   Cr	Dr   Cr	Dr   Cr	
100 (a)	100 (b1)	100 (b1)	

- a) LBSF has interest payable to customer (as a result of interest rate swap) and requests Treasury to pay
- b1) Journal entry to i/co account in LBSF for LBHI representing payable to LBHI
- b1) Journal entry to i/co account in LBHI for LBSF representing payable to LBHI
- b2) LBHI pays to customer

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**10.2.2. Internal payment between LBI and LBIE**

MTS		ITS		GCCM					
Trading Book in LBI		Trading Book in LBIE		LBHI Control Nostro		LBHI Intercompany with LBHI UK		LBHI UK Intercompany with LBIE	
Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr
100 (a)			100 (a)	100 (d)	100 (b)				
LBI Control Nostro		LBIE Control Nostro		LBHI Intercompany with LBI		LBHI UK Intercompany with LBHI		LBHI UK Intercompany with LBIE	
Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr
	100 (a)	100 (a)		100 (b)			100 (d)		100 (f)
LBI Intercompany with LBHI		LBHI UK Intercompany with LBHI		LBIE Intercompany with LBHI UK		LBHI UK Control Nostro		LBIE Control Nostro	
Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr
	100 (c)			100 (e)		100 (f)	100 (e)		100 (g)

- a) LBI trades with LBIE and settles 'cash' rather than intercompany between entities direct
- b) Journal entry to i/co account with in LBHI representing receivable from LBI
- c) Journal entry to i/co account with in LBI representing payable to LBHI
- d) Journal entry to i/co account with in LBHI representing payable to LBHI UK
- e) Journal entry to i/co account with in LBHI UK representing receivable from LBHI
- f) Journal entry to i/co account with in LBHI UK representing payable to LBIE
- g) Journal entry to i/co account with in LBIE representing receivable from LBHI UK
- h) Reconciliation of all control and intercompany accounts

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- ◆ Net result is LBI has increased payable to LBHI, LBIE has reduced payable to LBHI UK Branch rather than a direct intercompany position between the two regulated entities.
- ◆ Treasury and Reg. Controller groups monitor intercompany positions real time to ensure both regulated entities do not have unsecured receivables from the funding entities and minimise trapped cash positions

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### **10.3. *ADDENDUM to the GCCM BRD***

#### **10.3.1. Security:**

GCCM will implement the following security features

1. Wherever possible, use a secured way of communicating with the source systems. Not all the source systems are on the standard platform. An effort should be made in long run to bring these systems on to the standard messaging platform.
2. As users will be accessing GCCM using a web based interface, GCCM will use Lehman's single sign-on method in order to leverage the LehmanLive authentication integration services.

#### **10.3.2. Entitlements:**

Entitlements will further restrict users to perform certain operations within GCCM. Users will be grouped into functional groups such as "Operations", "Managers" to enforce certain restrictions at approval levels. Furthermore, it is possible to restrict the user from accessing certain screens.

As of this writing, assessment is currently underway to determine the suitability of using ELMO.

#### **10.3.3. Feeds:**

As each payments comes to the Gateway from each of the source systems, the transaction will be stored in a repository.

GCCM will send these payments through the validation process and any failed items will be sent to the repair queue whereas the successful items will be released from GCCM to the agent banks.

Through each stage of process within GCCM, a message will be sent back to each source system of the state of each payment.

In addition, as part of the end of day GCCM process, there will be a reconciliation of released payments to the payments residing in the repository. A report will be generated for any differences and emailed to the appropriate parties.

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#### **10.3.4. Auditing**

GCCM will be using a comprehensive logging framework to enable debugging and auditing. Each action taken by the user will be tracked by timestamp and activity. Furthermore, as each payment moves thru the payment processing channel, the state of the transaction will be recorded. For example, if an item failed a transaction escalation limit, it will record the failure and a CM approval is required. When item is approved, it will track the approver user id, timestamp.

#### **10.3.5. Additional bullets:**

##### **10.3.5.1. Inter company paths:**

There will be a funding entity tree showing each entity's parent and path. Their position on the tree represents the funding structure rather than its actual position in firm's legal entity structure.

This will allow finding of inter company relationships for the creation of accounting entries.

##### **10.3.5.2. Reconciliation process:**

There will be 2 reconciliation processes to be undertaken:

1. As part of the Start of Day process, a reconciliation of the DBS account balances to the GCCM account balances will be performed.

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2. There will be a reconciliation in GSSR of the bank accounts against the RWN accounts in GCCM and each individual's source system in house accounts with GCCM in house account balances. Any differences will be brought into GCCM and reported as a 'REC' item.

**10.3.5.3. Credits/Debits and Daily Nets:**

The tables storing the end\_of\_day balances will be in debits/credits accounting signage conventions. In other words, debits will be positives and credits will be negatives. The intraday/eod of day generation of journals will always have a credit and a debit entry. Therefore, on an individual transaction, the sum of all the journals will be zero. Systematically, at the eod of the day, there will be a check to make sure that the sum of credits and debits for the day's activities will be zero.

**10.3.5.4. Unsecured receivables for regulated entities:**

There will be an indicator on the legal entity table stating that an entity is a regulated entity. On a daily basis, GCCM will provide a warning message on the real-time balance viewing as well as end of day reports for showing the "Due From" accounts and their respective amounts for each regulated entity. CCM will have to act on this by paying down these receivables so that the regulated entity at the end of the month will have 'Due From' outstanding of zero.

11. Approval & Sign-off

List names of the senior representatives who will sign off this document, both for the requirements section and the service level agreement.

Department/Role	Name	Signature	Date
SPOCS			

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**EXHIBIT B**

## Lehman Re Ltd. and Subsidiary

### Notes to Consolidated Financial Statements

December 31, 2007

#### 1. Operations

Lehman Re Ltd. (the "Company") was incorporated on April 1, 1998 under the laws of Bermuda to underwrite property and casualty, as well as life and annuity, insurance and reinsurance. The Company was capitalized and commenced operations on June 1, 1998. The Company offers customized products organized around three areas: finite and structured financial solutions, property catastrophe reinsurance and life and annuity reinsurance. The Company utilizes brokers and intermediaries to source both insurance and reinsurance business. The Company is a wholly-owned subsidiary of Lehman Brothers Holdings Inc. ("Holdings" or "parent company"). On December 12, 2007, its wholly-owned subsidiary, Zen Limited, which was incorporated in Bermuda, was dissolved. On May 11, 2007, the Company acquired Congress Life Insurance Company ("Congress"), a life insurance company licensed in 42 states and Washington D.C from JP Morgan Insurance Holdings LLC for \$9.4 million to provide structural advantages as an operating platform for the Company. 119

The Company is also subject to a Bermuda Act of Parliament, Lehman Re Ltd. Act, 1998 (the Act). The Act provides for the creation of legally separate accounts for the conduct of insurance business. The Company does not have any such accounts.

The Company has a Net Worth Maintenance Agreement with the parent company. Under this agreement, the parent company commits to maintain the Company's minimum solvency margin as required under the laws of Bermuda. If the Company does not have the liquidity necessary to enable it to meet its current obligations on a timely basis, the parent company shall (in a mutually satisfactory manner) provide the Company with liquidity needed to enable it to meet its obligations in a timely manner. The obligations of the parent company to provide liquidity shall not include those liabilities arising from separate account business (unless expressly agreed), including but not limited to all risk contracts, policies and event linked financial instruments. The agreement may be terminated in the future by either party.

#### 2. Significant Accounting Policies

These consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States. All intercompany transactions have been eliminated. Significant accounting policies are as follows:

Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**2. Significant Accounting Policies (continued)**

**Losses and Loss Adjustment Expenses and Future Policy Benefits**

A reserve for losses and loss adjustment expenses is established for estimated unpaid claims and claim adjustment expenses on reported losses as well as estimated losses incurred but not reported. The liability is based on reports and individual case estimates received from ceding companies as well as management estimates of ultimate losses. Inherent in the estimates of ultimate losses are expected trends in claim severity and frequency and other factors, which could vary significantly as claims are settled. Accordingly, ultimate losses may vary materially from the amounts provided in the financial statements. These estimates are reviewed regularly and, as experience develops and new information becomes known, the reserves are adjusted as necessary. Such adjustments, if any, are reflected in results of operations in the period in which they become known.

Future policy benefits under traditional life and annuity contracts are estimated based upon expected investment yields and assumptions relating to mortality, morbidity, terminations and expenses applicable at the time the contracts are issued. These assumptions are based on the ceding company's experience as well as industry experience and standards and include a margin for adverse deviation. The assumptions vary with the characteristics of the plan of insurance, year of issue, age of insured and other appropriate factors. The liability for future policy benefits represents the present value of future benefits and expenses to be paid in excess of the present value of future net premiums to be received. Rates for discounting future cash flows are based upon the United States dollar and British pound sterling swap curve, and range between 3.50% and 7.37%.

Reinsurance recoverable on future policy benefits have been recorded net of reinsurance premiums payable on contracts, which accrue interest, where the right of offset exists, and credit allowance.

**Cash and Cash Equivalents**

Cash and cash equivalents include highly liquid investments not held for resale with maturities of three months or less.

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Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

2. Significant Accounting Policies (continued)

Fair Values

Investments and financial instruments owned, and Reinsurance liabilities are recognized on a trade-date basis and are carried at fair value. See note 3, "Fair Value of Financial Instruments."

Investments and Financial Instruments

***Mortgage Backed Securities and Government and Agencies*** The Company's mortgage backed securities and government and agencies are classified as trading securities and are carried at fair value with unrealized gains and losses reported in earnings as a component of net gain on investments. Fair value of investments is generally based on listed market prices, where available. If listed market prices are not available, fair value is determined based on other relevant factors, including broker or dealer price quotations and valuation pricing models which take into account time value and volatility factors underlying the financial instruments. For additional information regarding fair value, see Note 3, "Fair Value of Financial Instruments," to the Consolidated Financial Statements.

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***Derivatives and Other Contractual Agreements*** Derivatives are financial instruments whose value is based on an underlying asset (e.g., Treasury bond), index (e.g., S&P 500) or reference rate (e.g., LIBOR), and include futures, forwards, swaps, option contracts, or other financial instruments with similar characteristics. A derivative contract generally represents a future commitment to exchange interest payment streams or currencies based on the contract or notional amount or to purchase or sell other financial instruments or physical assets at specified terms on a specified date. In the normal course of business, the Company enters into derivatives and other contractual agreements for trading and non-trading purposes.

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Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**2. Significant Accounting Policies (continued)**

Derivatives for trading purposes are valued at fair value in the Consolidated Balance Sheets on a net by counterparty basis where a legal right of offset exists and changes in fair values are recorded as net gain or loss on investments in the Consolidated Statements of Income. Derivatives often are referred to as off-balance-sheet instruments because neither their notional amounts nor the underlying instruments are reflected as assets or liabilities of the Company. Instead, the market or fair values related to the derivative transactions are reported in the Consolidated Balance Sheets as assets or liabilities, in Derivatives and other contractual agreements, as applicable. Fair value is generally determined by pricing models. Pricing models utilize a series of market inputs to determine the present value of future cash flows with adjustments, as required, for credit risk and liquidity risk. Credit-related valuation adjustments incorporate historical experience and estimates of expected losses. Additional valuation adjustments may be recorded, as considered appropriate, for new or complex products or for positions with significant concentrations. These adjustments are integral components of the mark-to-market process. For additional information regarding fair value, see Note 3, "Fair Value of Financial Instruments," to the Consolidated Financial Statements.

Prior to January 1, 2007, the Company followed Emerging Issues Task Force ("EITF") Issue No. 02-3, *Issues Involved in Accounting for Derivative Contracts Held for Trading Purposes and Contracts Involved in Energy Trading and Risk Management Activities* ("EITF 02-3"). Under EITF 02-3, recognition of a trading profit at inception of a derivative transaction was prohibited unless the fair value of that derivative was obtained from a quoted market price, supported by comparison to other observable inputs or based on a valuation technique incorporating observable inputs. Subsequent to the transaction date, the Company recognized trading profits deferred at the inception of the derivative transaction in the period in which the valuation of the instrument becomes observable. The adoption of SFAS 157, *Fair Value Measurement* (SFAS 157) nullified the guidance in EITF 02-3 that precluded the recognition of a trading profit at the inception of a derivative contract, unless the fair value of such derivative was obtained from a quoted market price or other valuation technique incorporating observable inputs. For further discussion of our adoption of SFAS 157, see "Accounting and Developments—SFAS 157" below.

The Company utilizes derivative products for non-trading purposes as an end-user to modify the interest rate characteristics of its future policy benefits.

Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**2. Significant Accounting Policies (continued)**

Under SFAS 133, *Accounting for Derivative Instruments and Hedging Activities*, as amended by SFAS No. 138 and SFAS No. 149, *Accounting for Certain Derivative Instruments and Certain Hedging Activities* (collectively, SFAS 133), the accounting for end-user derivative activities is dependent upon the nature of the hedging relationship. In certain hedging relationships, both the derivative and the hedged item will be marked-to-market through earnings for changes in fair value (fair value hedge). In many instances, the hedge relationship is fully effective so that the mark-to-market on the derivative and the hedged item will offset. Any hedge ineffectiveness in this relationship is recorded in policy claims and benefits in the Consolidated Statements of Income.

**Identifiable Intangible Assets**

Identifiable intangible assets with indefinite lives are not amortized. Instead, these assets are evaluated at least annually for impairment.

**Repurchase and Resale Agreements**

Securities purchased under agreement to resell and securities sold under agreement to repurchase are trade financing transactions recorded at their contracted resale or repurchase amount. It is the Company's policy to take possession of securities purchased under agreements to resell. The Company compares the market value of the underlying positions on a daily basis with the related receivable or payable balances, including accrued interest. The Company requires counterparties to deposit additional collateral or return collateral pledged, as necessary, to ensure the market value of the underlying value remains sufficient. Accrued interest is included in accrued investment income, with unrealized gains and losses reflected in net investment income in the Consolidated Statements of Income.

**Income Taxes**

We account for income taxes in accordance with SFAS No. 109, *Accounting for Income Taxes*. We recognize the current and deferred tax consequences of all transactions that have been recognized in the financial statements using the provisions of the enacted tax laws. Deferred tax assets are recognized for temporary differences that will result in deductible amounts in future years and for tax loss carry-forwards. We record a valuation allowance to reduce deferred tax assets to an amount that more likely than not will be realized. Deferred tax liabilities are recognized for temporary differences that will result in taxable income in future years.

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Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**2. Significant Accounting Policies (continued)**

Contingent liabilities related to income taxes are recorded when probable and reasonably estimable in accordance with SFAS No. 5, *Accounting for Contingencies*.

For a discussion of the impact of FIN 48, *Accounting for Uncertainty in Income Taxes—an Interpretation of FASB Statement No. 109* (“FIN 48”), see “Accounting Developments —FIN 48” below. The Company elected to be treated as a U.S. domestic insurance company for U.S. federal tax purposes, and is therefore, subject to income taxation in the U.S.

**Foreign Exchange**

Assets and liabilities denominated in non-U.S. dollar currencies are translated at foreign exchange rates in effect at the consolidated balance sheet dates. Revenues and expenses denominated in non-U.S. dollar currencies are translated into U.S. dollars at rates prevailing when the income was earned or expenses incurred. The resulting gains and losses from translating foreign currency transactions into U.S. dollars, net of hedging gains or losses, are included in net gains on investments account in the Consolidated Statements of Income.

**Use of Estimates**

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Although estimates are considered to be fairly stated at the time the estimates are made, actual results could vary materially from those estimates.

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**Reclassification**

Certain prior year amounts have been reclassified to conform to the 2007 presentation.

**Accounting Developments**

**SFAS 157.** In September 2006, the FASB issued SFAS 157. SFAS 157 defines fair value, establishes a framework for measuring fair value, outlines a fair value hierarchy based on inputs used to measure fair value and enhances disclosure requirements for fair value measurements. SFAS 157 does not change existing guidance as to whether or not an instrument is carried at fair value.

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Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**2. Significant Accounting Policies (continued)**

SFAS 157 also (i) nullifies the guidance in EITF 02-3 that precluded the recognition of a trading profit at the inception of a derivative contract, unless the fair value of such derivative was obtained from a quoted market price or other valuation technique incorporating observable inputs; (ii) clarifies that an issuer's credit standing should be considered when measuring liabilities at fair value; (iii) precludes the use of a liquidity or block discount when measuring instruments traded in an active market at fair value; and (iv) requires costs related to acquiring financial instruments carried at fair value to be included in earnings as incurred.

The Company elected to early adopt SFAS 157 at the beginning of our 2007 calendar year and we recorded the difference between the carrying amounts and fair values of (i) stand-alone derivatives and/or certain hybrid financial instruments measured using the guidance in EITF 02-3 on recognition of a trading profit at the inception of a derivative, and (ii) financial instruments that are traded in active markets that were measured at fair value using block discounts, as a cumulative-effect adjustment to opening retained earnings. The Company did not realize any impact as a result of adopting SFAS 157. For additional information regarding our adoption of SFAS 157, see Note 3, "Fair Value of Financial Instruments".

**SFAS 159.** In February 2007, the FASB issued SFAS 159, *The Fair Value Option for Financial Assets and Financial Liabilities* (SFAS 159) which permits certain financial assets and financial liabilities to be measured at fair value, using an instrument-by-instrument election. The initial effect of adopting SFAS 159 must be accounted for as a cumulative-effect adjustment to opening retained earnings for the calendar year in which we apply SFAS 159. Retrospective application of SFAS 159 to calendar years preceding the effective date is not permitted.

The Company elected to early adopt SFAS 159 beginning in our 2007 calendar year. The adoption of SFAS 159 had no impact on the Company's historical financials statements.

**FIN 48.** In June 2006, the FASB issued FIN 48, which sets out a framework for management to use to determine the appropriate level of tax reserves to maintain for uncertain tax positions. This interpretation of SFAS 109 uses a two-step approach wherein a tax benefit is recognized if a position is more likely than not to be sustained, and the amount of benefit is then measured on a probabilistic approach, as defined in FIN 48. FIN 48 also sets out disclosure requirements to enhance transparency of an entity's tax reserves. The Company must adopt FIN 48 as of the beginning of our 2008 calendar year. The adoption of FIN 48 had no impact on the Company's financial statements.



Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**2. Significant Accounting Policies (continued)**

**FSP FIN 39-1.** In April 2007, the FASB directed the FASB Staff to issue FSP No. FIN 39-1, *Amendment of FASB Interpretation No. 39* ("FSP FIN 39-1"). FSP FIN 39-1 modifies FIN No. 39, *Offsetting of Amounts Related to Certain Contracts*, and permits companies to offset cash collateral receivables or payables with net derivative positions under certain circumstances. FSP FIN 39-1 is effective for calendar years beginning after November 15, 2007, with early adoption permitted. FSP FIN 39-1 does not affect the Consolidated Financial Statements because it clarified the acceptability of existing market practice, which we use, of netting cash collateral against net derivative assets and liabilities.

**FSP FIN 48-1.** In May 2007, the FASB directed the FASB Staff to issue FSP No. FIN 48-1, *Definition of "Settlement" In FASB Interpretation No. 48* ("FSP FIN 48-1"). Under FSP FIN 48-1, a previously unrecognized tax benefit may be subsequently recognized if the tax position is effectively settled and other specified criteria are met. The Company is evaluating the effect of adopting FSP FIN 48-1 on the Consolidated Financial Statements as part of our evaluation of the effect of adopting FIN 48.

**3. Fair Value of Financial Instruments**

Investments and financial instruments owned, and reinsurance liabilities, are presented at fair value. Fair value is defined as the price at which an asset or liability could be exchanged in a current transaction between knowledgeable, willing parties. Where available, fair value is based on observable market prices or parameters or derived from such prices or parameters. Where observable prices or inputs are not available, valuation models are applied. These valuation techniques involve some level of management estimation and judgment, the degree of which is dependent on the price transparency for the instruments or market and the instruments' complexity.

Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**3. Fair Value of Financial Instruments (continued)**

Beginning January 1, 2007, assets and liabilities recorded at fair value in the Consolidated Balance Sheets are categorized based upon the level of judgment associated with the inputs used to measure their fair value. In accordance with SFAS 157, the valuation techniques used for assets and liabilities accounted for at fair value are generally under the income approach. Income approach valuation techniques convert future amounts, such as cash flows or earnings, to a single present amount, or a discounted amount. These techniques rely on current market expectations of future amounts. Examples of income approach valuation techniques include present value techniques; option-pricing models, binomial or lattice models that incorporate present value techniques; and the multi-period excess earnings method. This approach described within SFAS 157 is consistent with generally accepted valuation methodologies. The valuation method considers the definition of an exit price and the nature of the asset or liability being valued and significant expertise and judgment is required. Hierarchical levels – defined by SFAS 157 and directly related to the amount of subjectivity associated with the inputs to fair valuation of these assets and liabilities – are as follows:

Level I – Inputs are unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date.

Level II – Inputs (other than quoted prices included in Level I) are either directly or indirectly observable for the asset or liability through correlation with market data at the measurement date and for the duration of the instrument's anticipated life.

Level III – Inputs reflect management's best estimate of what market participants would use in pricing the asset or liability at the measurement date. Consideration is given to the risk inherent in the valuation technique and the risk inherent in the inputs to the model.

An asset or a liability's categorization within the fair value hierarchy is based on the lowest level of significant input to its valuation.

Fair value of investments and financial instruments owned, and reinsurance liabilities at December 31, 2007 were:

Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

3. Fair Value of Financial Instruments (continued)

	At December 31, 2007			
	Level I	Level II	Level III	Total
Investment and financial instruments owned:				
Mortgage backed securities	\$ -	\$ 73,871,386	\$ -	\$ 73,871,386
Government and agencies	-	5,044,541	-	5,044,541
Derivatives and other contractual agreements	-	51,332,754	-	51,332,754
Total investment and financial instruments owned	\$ -	\$ 130,248,681	\$ -	\$ 130,248,681
Reinsurance liabilities	\$ -	\$ -	\$ 4,637,024	\$ 4,637,024
Total reinsurance liabilities	\$ -	\$ -	\$ 4,637,024	\$ 4,637,024

The table presented below summarizes the change in balance sheet carrying value associated with Level III financial instruments during the calendar year ended December 31, 2007. Caution should be utilized when evaluating reported net revenues for Level III Financial instruments. The values presented exclude economic hedging activities that may be transacted in instruments categorized within other fair value hierarchy levels. Actual net revenues associated with Level III financial instruments inclusive of hedging activities could differ materially.

	Balance December 31, 2006	Net Payments, Purchases and Sales	Net Transfers In (Out)	Losses (Gains) <sup>(1)</sup> Realized Unrealized	Balance December 31, 2007
Reinsurance liabilities	\$ -	\$ 3,315,658		\$ 1,321,366	4,637,024

<sup>(1)</sup> The current period losses (gains) from changes in values of Level III financial instruments represent losses (gains) from changes in values of those financial instruments only for the period(s) in which the instruments were classified as Level III.

<sup>(2)</sup> The unrealized losses (gains) is reflected in other expense line of the consolidated statements of income.

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Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**7. Reinsurance**

In the ordinary course of business the Company cedes certain risks to other companies. These reinsurance contracts do not relieve the Company from its primary liability should any reinsurer be unable to meet its obligations. Failure of reinsurers to honor their obligations could result in losses to the Company. The Company evaluates the financial condition of its reinsurers to minimize its exposure to significant losses from reinsurer insolvencies.

At December 31, 2007 and 2006, reinsurance recoverable was net of reinsurance premiums payable in the amount of, approximately, \$117.1 million and \$125.6 million, respectively and an allowance for reinsurance recoverable in the amount of \$2.5 million and \$2.5 million, respectively.

The effect of reinsurance on premiums written, premiums earned and losses incurred and policy claim benefits is as follows:

	Premiums Written		Premiums Earned	
	2007	2006	2007	2006
Assumed – Property & Casualty (non-affiliate)	\$ 75,969,396	\$ 14,594,299	\$ 61,192,554	\$ 10,377,356
Assumed – Property & Casualty (affiliate)	1,015,417	1,515,000	1,071,178	1,513,274
Ceded – Property & Casualty	(75,969,396)	(12,766,048)	(61,189,307)	(9,118,132)
Net	<u>\$ 1,015,417</u>	<u>\$ 3,343,251</u>	<u>\$ 1,074,425</u>	<u>\$ 2,772,498</u>

	Losses Incurred and Policy Claim Benefits	
	2007	2006
Assumed – Property & Casualty	\$ 10,112,724	\$ 1,262,465
Assumed – Life & Annuity	13,054,322	9,448,079
Ceded – Property & Casualty	(10,112,724)	(1,262,465)
Ceded – Life & Annuity	(5,092,945)	(5,246,099)
Net	<u>\$ 7,961,377</u>	<u>\$ 4,201,980</u>

Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**9. Related Party Transactions (continued)**

In the ordinary course of business the Company uses services of other affiliates, mainly investment related. These amounts are unsecured, accrue interest at LIBOR, and are included in receivable from and payable to affiliates in the Consolidated Balance Sheets.

**10. Statutory Requirements**

The Bermuda Insurance Act 1978 and related regulations (the Act) requires the Company to meet a minimum solvency margin. Statutory capital and surplus as of December 31, 2007 and 2006 was approximately \$377.3 million and \$358.5 million, respectively, and the minimum amount required to be maintained by the Company was approximately \$100.3 million and \$100.3 million, respectively. The Company meets the minimum liquidity ratio, whereby relevant assets as defined by the Act, exceed 75% of relevant liabilities. In this regard the declaration of dividends from shareholder's equity is limited to the extent that the above requirements are met. No dividends were declared in 2006 and 2007. At December 31, 2007 and 2006, retained earnings and additional paid-in capital of approximately \$99.0 million and \$99.0 million, respectively, were not available for distribution.

The Bermuda Monetary Authority (the Authority) is introducing an electronic risk-based capital model, Bermuda Solvency Capital Requirement (BSCR or standard model), to Class 4 general business insurers. The Authority will maintain the existing solvency basis until the 2008 year-end. Under the provisions of Sections 29A and 29B of the Act, the Authority will require submission of the standard model and related financial reporting for the 2007 year-end. Effective December 31, 2008, Class 4 general business insurers will be required to hold total statutory capital and surplus exceeding the Enhanced Capital Requirement ("ECR") prescribed by the Insurance (Prudential Standards) (Class 4 Solvency Requirement) Order 2008 ("the Order"). Insurers will also be expected to hold a safety margin or buffer above the ECR, at least in total equivalent to 120% of ECR ("Target Capital").

Congress is subject to certain Risk-Based Capital ("RBC") requirements as specified by the National Association of Insurance Commission (NAIC). Under those requirements, the amount of capital and surplus maintained by Congress is to be determined based on the various risk factors related to it. At December 31, 2007, the Company meets the RBC requirements. Statutory capital and surplus of Congress amounted to \$56.5 million in 2007. Without prior approval of the Director of the Arizona Department of Insurance, dividends and distributions to shareholders are limited to the net gain from operations or 10% of surplus of Congress, whichever is less. At December 31, 2007, net gains from operations of approximately \$0.07 million, were available for distribution. There were no dividend payments in 2007.

Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**11. Commitments and Contingencies**

At December 31, 2007 and 2006, the Company held cash collateral of \$343.6 million and \$61.1 million, respectively, for the purposes of securing potential obligations of its reinsurers.

At December 31, 2007 and 2006, the Company had investments of approximately \$73.9 million and \$133.3 million, respectively, and securities purchased under the agreements to resell of approximately \$182.0 million and \$185.0 million, respectively, that were held in trust accounts for the benefit of ceding companies.

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**EXHIBIT C**

	<i>Filing</i>	<i>Dividend Payments</i>						
Date	10/5/2008	4/17/2012	10/1/2012	4/4/2013	10/3/2013	4/3/2014	10/2/2014	Total
<i>LBCC Dividend Rate</i>		25.66%	17.04%	10.34%	23.26%	11.11%	12.59%	100.00%
LBCC Dividend Payments		\$22,479,350.68	\$14,930,791.01	\$9,061,448.38	\$20,382,052.67	\$9,735,354.64	\$11,032,002.62	\$87,621,000.00
Post Petition Interest - GCCM Rate	5.37875%	\$4,572,602.40	\$3,473,028.95	\$2,408,333.11	\$6,099,948.22	\$3,248,391.21	\$4,070,465.86	\$23,872,769.75
Post Petition Interest - English Statutory Rate	8.00000%	\$7,026,732.05	\$5,369,540.16	\$3,748,834.93	\$9,559,555.66	\$5,125,544.06	\$6,467,018.10	\$37,297,224.96



**Exhibit B**

CCP Credit Acquisition Holdings, L.L.C.  
Postpetition Interest Demand Annex (with exhibits)

**UNITED STATES BANKRUPTCY COURT  
SOUTHERN DISTRICT OF NEW YORK**

-----X  
:  
**In re:** :

**Chapter 11**

**LEHMAN BROTHERS HOLDINGS INC., *et al.*,** :

**Case No. 08-13555 (SCC)**

**Debtors.** :

**(Jointly Administered)**  
:  
-----X

**ANNEX TO DEMAND FOR POSTPETITION INTEREST SUBMITTED  
BY CCP CREDIT ACQUISITION HOLDINGS, L.L.C. AGAINST  
LEHMAN BROTHERS COMMERCIAL CORPORATION**

1. On September 15, 2008 (the “Petition Date”), Lehman Brothers Holdings Inc. and several of its subsidiaries commenced a voluntary proceeding (the “LBHI Proceeding”) under chapter 11 of title 11 of the United States Code, in the United States Bankruptcy Court for the Southern District of New York (the “Bankruptcy Court”).

2. Also on September 15, 2008, Lehman Brothers International (Europe) (“LBIE”) entered into administration by order of the High Court Chancery Division of England and Wales.

3. On October 5, 2008 (the “LBCC Petition Date”), Lehman Brothers Commercial Corporation (“LBCC”) commenced a voluntary proceeding (the “LBCC Proceeding”) in the Bankruptcy Court under chapter 11 of title 11 of the United States Code. The LBHI Proceeding and the LBCC Proceeding have been consolidated for administrative purposes (the “Lehman Proceeding”).

4. On September 23, 2008, a winding-up proceeding was commenced on behalf of Lehman Re Ltd. (“Lehman Re”) in the Supreme Court of Bermuda (the “Bermuda Court”). By order of the Bermuda Court dated September 23, 2008, Peter C.B. Mitchell and D. Geoffrey Hunter were appointed as the joint provisional liquidators (the “JPLs”) for Lehman Re. The

Bermuda Court subsequently appointed Dan Schwarzmans and Garth Calow as successor JPLs for Lehman Re on April 8, 2010 and July 19, 2011, respectively.

5. On August 6, 2009, the JPLs filed a Verified Petition Under Chapter 15 for Recognition of a Foreign Main Proceeding in the Bankruptcy Court, and by order dated September 24, 2009, the Bankruptcy Court granted such recognition and other related relief (the “Chapter 15 Proceeding”). See Docket Nos. 2 and 56 in the Chapter 15 Proceeding.

6. On September 22, 2009, the JPLs, on behalf of Lehman Re, filed Proof of Claim No. 28308 (the “Claim”) against LBCC relating to certain Lehman Re funds (the “Funds”) transferred to LBCC (the “LBCC Account”) by LBIE. The Funds were subject to the terms of a custody agreement (the “Custody Agreement”) between Lehman Re and LBIE, dated March 19, 1999. LBIE transferred the funds to LBCC prior to the LBCC Petition Date in breach of the terms of the Custody Agreement.

7. On February 6, 2012, Lehman Re, LBCC, and various other parties entered into a settlement agreement (the “Settlement Agreement”) that provided for, among other things, the Claim to be allowed in the amount of \$87,621,000.00, based on the balance of the LBCC Account in September 2008 and the application of certain exchange rate adjustments.

8. On March 22, 2012, the Bankruptcy Court entered orders in the Lehman Proceeding and the Chapter 15 Proceeding approving the Settlement Agreement. See Docket No. 27085 in the Lehman Proceeding and Docket No. 136 in the Chapter 15 Proceeding.

9. Pursuant to an agreement dated November 18, 2013, Lehman Re assigned 36.11% or \$31,642,936.34 of the Claim to CCP Credit Acquisition Holdings, L.L.C. (“CCP”) and 19.51% or \$17,090,986.87 of the Claim to Centerbridge Special Credit Partners II, L.P. (“CSCP”). Chase Lincoln First Commercial Corp. (“Chase Lincoln”) ultimately acquired

portions of the CCP and CSCP holdings such that it now owns 10.05% or \$8,802,249.57 of the Claim. Lehman Re retains 44.38% or \$38,887,076.79 of the Claim.

10. In response to the Order Establishing Bar Date for Demands for Postpetition Interest Against Lehman Brothers OTC Derivatives Inc. and Lehman Brothers Commercial Corporation, which was entered by the Bankruptcy Court on March 24, 2015 (Docket No. 48966 in the Lehman Proceeding), CCP hereby submits this annex to CCP's Demand for Postpetition Interest from LBCC (the "Demand").

11. CCP is not aware of an express written agreement between LBIE and LBCC governing LBIE's transfer of the Funds to LBCC and the management thereof. However, the Lehman group did have express written policies dictating the appropriate interest rate for intercompany claims. Specifically, Lehman's Business Requirement Document for its Global Cash and Collateral Management ("GCCM") system accounts for the "intercompany recover of the cost of funding" by setting the "rates at which credit and debit interest is paid...[at] the Treasury Index rate. Currently the Index rate is 1 week LIBOR flat". See Business Requirement Document GCCM § 5.3.2.3, attached hereto as Exhibit A. Further, Lehman Re's audited financial statements indicate that its accounts with Lehman affiliates accrued interest at LIBOR. See, e.g., Lehman Re Ltd. and Subsidiary, Notes to Consolidated Financial Statements § 9, attached hereto as Exhibit B.

12. The Funds in the LBCC Account were denominated in British pounds sterling. The appropriate LIBOR index, therefore, is the GBP 1 week LIBOR rate, which yielded 5.3785% (the "GCCM Rate") on October 3, 2008, the last closing yield prior to the commencement of the LBCC Proceeding on Sunday, October 5, 2008.

13. Applying the GCCM Rate to the amount of the \$87,621,000.00 Claim that remained unpaid during the period starting on the LBCC Petition Date and ending on October 2,

2014 (the date upon which total distributions by LBCC on account of the Claim totaled \$87,621,000.00), indicates that the total post-petition interest owed by LBCC on account of the Claim is \$23,872,769.75.<sup>1</sup> Attached as Exhibit C is a spreadsheet detailing the calculation of total post-petition interest owed by LBCC on account of the Claim.

14. Because CCP holds 29.59% of the Claim, it is entitled to \$7,064,111.08 in post-petition interest from LBCC based on the GCCM Rate.

15. We understand that Lehman Re, CSCP, and Chase Lincoln will submit demands for post-petition interest from LBCC with regard to their respective portions of the Claim.

16. In filing the Demand, CCP expressly reserves all rights and causes of action that CCP may have against LBCC. Furthermore, CCP expressly reserves all rights to amend, modify and/or supplement the Demand in any respect.

17. Nothing contained in the Demand nor subsequent appearance, pleading, claim or suit is intended to be a waiver or release of: (i) the right of CCP to have final orders in non-core matters entered only after de novo review by a district court judge; (ii) the right of CCP to a jury trial in any proceeding so triable herein or, in any case, any controversy or proceeding related hereto; (iii) the right of CCP to move to withdraw the reference with respect to the subject matter of this Demand, any objection thereto or any other proceeding which may be commenced in the Lehman Proceeding against or otherwise involving CCP, including without limitation, any adversary proceeding that was or may be commenced by any party or committee in either the LBHI Proceeding or in the LBCC Proceeding; or (iv) any other rights, claims, actions, defenses, setoffs or recoupments to which CCP is or may be entitled under agreements, documents or

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<sup>1</sup> CCP believes that if the GCCM Rate did not apply for any reason, the English statutory interest rate of 8% (the “English Statutory Rate”) would be applicable as the Custody Agreement between Lehman Re and LBIE is governed by the laws of England. See Judgments Act 1838. Applying the English Statutory Rate, the total post-petition interest owed by LBCC on account of the Claim is \$37,297,224.96.

instruments, in law or equity, all of which rights, claims, actions, defenses, setoffs and recoupments are expressly reserved.

18. All notices with respect to the Demand should be sent to:

CCP Credit Acquisition Holdings, L.L.C.  
c/o Centerbridge Partners, L.P.  
Attn: Shanshan Cao  
375 Park Avenue, 12<sup>th</sup> Floor  
New York, NY 10152  
Email: [scao@centerbridge.com](mailto:scao@centerbridge.com)

and

CCP Credit Acquisition Holdings, L.L.C.  
c/o Centerbridge Partners, L.P.  
Attn: Lauren Grainer  
375 Park Avenue, 12<sup>th</sup> Floor  
New York, NY 10152  
Email: [lgrainer@centerbridge.com](mailto:lgrainer@centerbridge.com)

with copy to:

Andrews Kurth LLP  
450 Lexington Avenue  
New York, NY 10017  
Attn: David Hoyt  
E-mail: [dhoyt@andrewskurth.com](mailto:dhoyt@andrewskurth.com)

**EXHIBIT A**

**LEHMAN PROJECT FRAMEWORK**

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**Business Requirements Document**

**GCCM**

**Module One**

**Disbursements and Receipts**

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BRD

LEHMAN BROTHERS

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## 1. Version History

Version	Primary Author(s)	Update	Date
1	Philip Duggan	Initial Document	22 July 04
1.1	Philip Duggan	Completed first draft	27 August 04
1.2	Philip Duggan	Clarifications to certain items	9 September 04
1.2a	Philip Duggan	Resave as 1.2 corrupted	10 September 04
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	Nancy Chuen	Inclusion of status tree	
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1.4	Philip Duggan	Slight flow change	03 November 04
2.0	Philip Duggan	Completed second draft	03 November 04

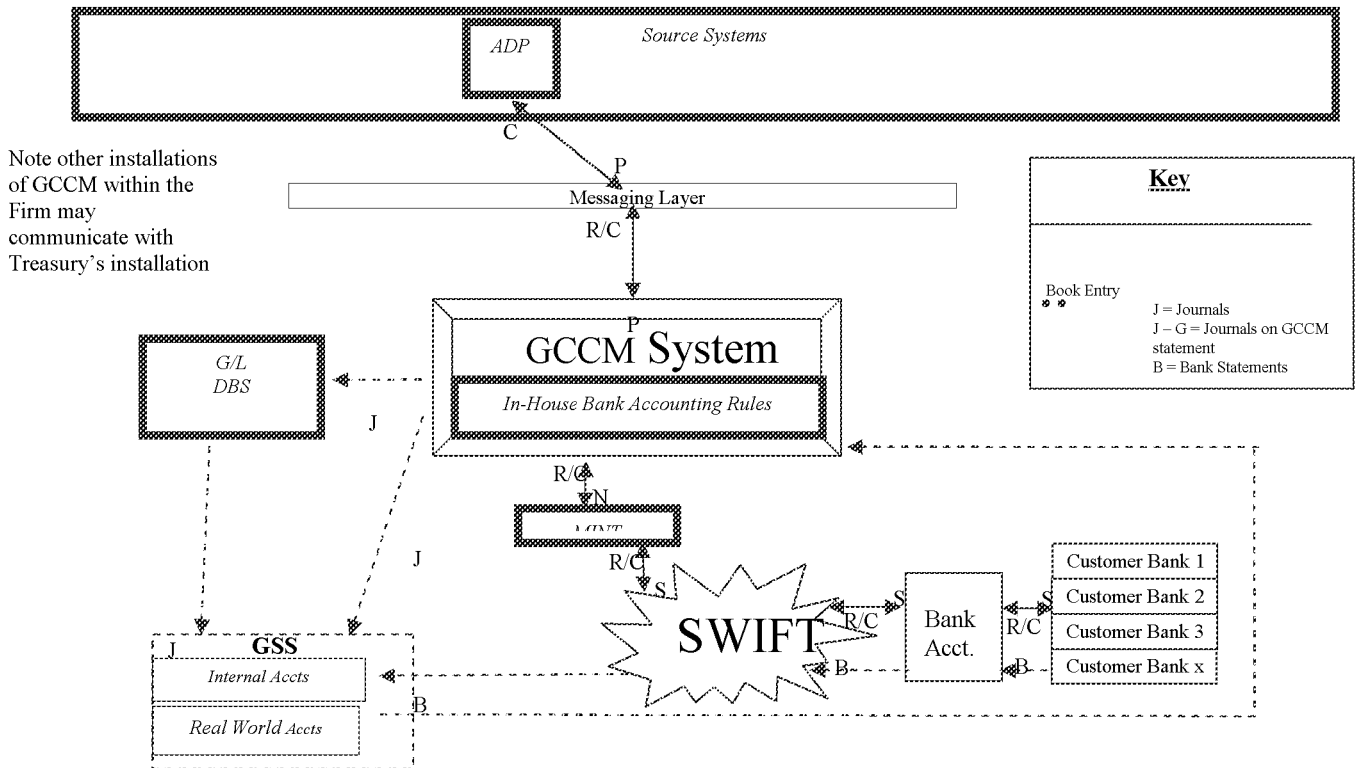
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## 2. Management Summary

GCCM Disbursements & Receipts will centralize and internalize, where possible, all of the Firm's cash flows. To that end, the system will be inclusive of all known payment activity globally, while designed with sufficient scalability and flexibility to incorporate new activity with little effort. It forms part of a larger development to create a global cash and collateral management tool for the Firm.

### 2.1. Graphical Representation – GCCM D&R



The premise of the design is that all payment activity including preadvice notifications from feeder systems will be sent to D&R for processing and each nostro account owned by the Firm will be hosted on GCCM so that CCM have the ability to manage intra-day liquidity across all entities from one consolidated view.

D&R is not intended to replace or decommission existing payment systems, though it may enable this to occur, rather it is a centralization tool for Treasury that will intermediate between existing OTG systems and the Firm's nostro agent banks. The feeder systems in use today will remain intact and will continue to provide the security, input and approval functions that they do today. The key difference is that CCM staff will no longer operate on these systems.

GCCM is to be designed so that it has the scalability to absorb new internal systems, acquisitions, new businesses / legal entities and additional currencies while interfacing with a number of payment channels including a cheque process. Moreover it will have the flexibility to cope with the Firm's existing convoluted payments and funding structures. It is to be based around extensions to standard SWIFT formatting conventions for cash messages to allow for other disbursement options and is expected to be an open platform, with data available for querying that will serve as a resource for the Firm.

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### 3. Project Scope

The following chapter outlines the basic structure of GCCM and Module One of GCCM, Disbursements & Receipts in particular. The workflow referenced in the following document can be found in appendix 10.1.

#### 3.1. GCCM Structure

GCCM is a web deployed tool designed to control the Firm's cash payment and nostro account funding processes. The proposed structure of the system is shown at the start of Appendix 10.1.1. It contains three distinct sections

- ◆ **Module One: Disbursements and Receipts** (roll-out to begin November 2005)
  - ◆ A central payment processing system.
  - ◆ An in-house bank settlement model to internalise payment traffic and nostro bank accounts.
  - ◆ Aggregation of all cash flows for funding of individual cash nostro accounts.
- ◆ **Module Two: Liquidity Management** (roll-out to begin late 2006)
  - ◆ A dashboard to monitor and predict the intraday and end of day funding requirements of securities depots.
  - ◆ Integration of real-time cash and collateral positions and same day trading activity.
- ◆ **Module Three: Liquidity Forecasting** (roll-out to begin late 2007)
  - ◆ Tactical / short term liquidity forecasting based on extensions to Liquidity Management
  - ◆ Projected cash and collateral availability.

This BRD outlines the workflow and functionality for Module One. In particular the following chapters will walk through key workflow steps of Module One in detail.

#### 3.2. Disbursement & Receipt Structure

Within Module One, the system contains:

- a payment processing function,
- an accounting function that contains the rule set for the in-house bank,
- on-line real time reporting for a limited time horizon (nine days forward and five days history),
- on-line historical reporting with a 25 month time horizon.

Beyond 25 months summary level details will be available via a separate archive database (accessed through Business Objects) containing up to 5 years worth of data and by recall of the back-up database tapes.

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The Payment Processing function contains three basic steps:

- Import of the request to pay or receive funds,
- Validation of the information sent with the request to ensure that the request can be settled and identify items that can be settled internally without a physical cash movement,
- Release of the request externally to the most optimal payment channel to minimise the Firm's external costs.

These steps will be outlined in chapter 4 and can be referenced in Appendix 10.1.2. The on-line real time reporting options will be covered as part of the accounting funding requirements in the payment processing function.

The Account function contains a number of processes to generate and record the accounting associated with the funding and settlement of the cash requests. These are:

- Generation of accounting per request
- Start of Day and End of Day processes to ensure integrity of data and generate intercompany interest
- Monthly End processes to recover interest and fee expenses for the settlement of cash processing.

These processes will be outlined in chapters 5.

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## **4. Payment and Receipt Processing and Account Balance Reporting**

### **4.1. D&R: Detail of Payment Import Control Processes - Ref 1.1**

The following chapter outlines the steps involved in importing data into GCCM D&R and exporting information from the system. A flow chart and table showing the various stages that a request goes through as it is processed is available in Appendix 10.1.2.

GCCM D&R will be a real time based system, accepting individual message representing a single payment or receipt request, and multi- thread these requests so that the platform can cope with a volume spike of 50,000 requests per hour. In turn the system should predominately release external requests real-time to the communication channel, e.g. SWIFT, chosen to send the individual request for settlement.

#### **4.1.1. Process Name: GCCM Gateway – Ref 1.1.1**

The Gateway will be used to pass messages between GCCM and other Lehman system. It will write data sent from a message generating system into the GCCM extended format and pass to GCCM Import function. In addition it will be responsible for routing messages from GCCM to other systems and controlling access to the data stored with GCCM.

##### **4.1.1.1. Basic Process Flow Incoming Requests, Internal Source – Ref 1.1.1.0:**

This section covers the main function of the Gateway which is to handle the Firm's cash settlement activity that arises as a result of the Firm's trading positions.

A number of source systems will feed cash instructions to GCCM D&R. It is expected that payment requests and preadvice notifications will be received into GCCM D&R from (at the least): RISC, ASAP, ADP, FPS, Treasury WorkStation Summit, Loan IQ, CTS, ITS, EFCash, and Walker AP/ R&R.

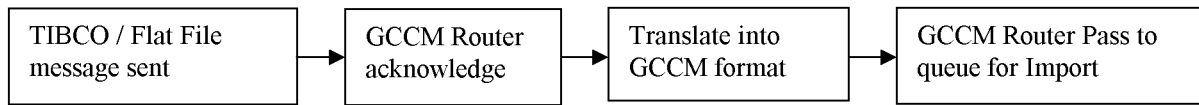
In addition it is envisaged that the GCCM Gateway would also be able to accept messages in a SWIFT format from MINT to allow traffic to be routed via MINT from internal systems or even via SWIFT for future acquisitions or business development. To allow for manual messages a web based interface will also exist that can upload payment request in bulk via a file transfer process, see section on manual input.

Note that on the flow chart Ref 1.1.1.1, OTG Traffic represents the systems listed above supported by Operations Technology Group and Finance traffic refers to Accounts Payable and Payroll activity. MINT is represented separately as Ref 1.1.1.3. TWS Summit is also noted as Ref 1.1.1.2 as this system to avoid confusion with the current TWS based Funding Hub model. The detail of each of these systems will be followed up in separate documents at the next stage in the system specification process.

Traffic released from a source settlement system or the GCCM Web based manual input process, Ref 1.1.1.4 in the diagram, will flow through to a TIBCO based router or Gateway / Adaptor function. Flat files submitted to GCCM should be read and converted into individual TIBCO messages by the Gateway.

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To ensure integrity of the Firm's payment architecture, the GCCM Gateway should authentic each originating system and acknowledge receipt of each message. Messages into and out of GCCM should be encrypt as per the Firm's current standards wherever feasible.

The Gateway will be responsible for standardising and depersonalising the messages from the source systems – for example field names, message structure, etc but will not review the content of the individual fields of each message. Specifically SWIFT code words and flags (A / D formatting) may need to be recognised to allow for source systems that send 'full formed' Swift like messages to GCCM and treated accordingly. The data should be split into the maximum number of fields and all information sent should be retained even if it is not subsequently used.

The Gateway will have responsibility for routing the traffic to the appropriate import queue for GCCM D&R, Ref 1.1.2.1 in the diagram. The function will need to pass items to a series of queues with the least payment traffic for the urgency flag set on the message.

After processing the GCCM Gateway will inform the source system that the received message has been passed to the next stage in the process. Note that at each stage in the D&R process, GCCM should publish status information via TIBCO but it will remain the source systems' responsibility to read this data.

#### 4.1.1.1.1. Required Information to generate a GCCM database record:

As a minimum the following information must be contained in the messages sent to GCCM for it to generate a payment or preadvice record.

Field	Character	Comments
System id		
System unique ref		
Time sent from System		
CCY		
Amount		
Value Date		
Business Account payee/ Receiver		
Debit / Credit indicator		
Beneficiary account		Could be GARM id, GCCM Account number or 3 <sup>rd</sup> party account id.
GCCM unique id		
GCCM status & version		



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4.1.1.1.2. Optional Information to include in a GCCM database record:

The following information can be contained in the messages sent to GCCM for the booking of payment or preadvice requests.

Field	Character	Comments
Mandatory Swift fields		
Optional Swift fields		
Other additional Info		
GARM id		
Message type		
Message priority		
Legal entity		
User who input		
User who authorised		
User who authorised 2 / released		
Internal only movement flag		
GCCM user amendment		
GCCM checks status		
Provisional Figure Indicator		
Payment to be held		Payment can only be released manually regardless of if it is to be settled through an auto release payment queue
Beneficiary's Address details		

4.1.1.1.3. Notes

1. TIBCO, MERVA / MINT and SWIFT all allow process flags to be set. GCCM will need to accept and potentially prioritise traffic based on these flags.
2. GCCM Gateway queues will be system specific but GCCM Import queues should not.
3. The GCCM Gateway may need to include a mapping table that turns source system data into GCCM appropriate data, as TWS Payment Import currently maps ASAP traffic to a TWS code.

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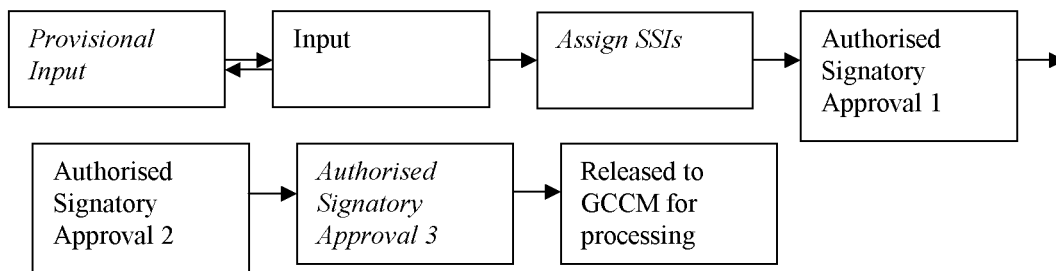
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#### 4.1.2. Process Name: Manual Cash Transfer Input - Ref 1.1.1.4

While most traffic will be created in settlement systems, manual traffic will remain. The following section outlines the process required to allow the input of such messages into GCCM

##### 4.1.2.1. Basic Process Flow: Web Input Function

Users will be expected to login to the GCCM D&R function where they will be able to select the ability to input cash messages. Note that user access to this function will be restricted and dual control requirements will exist for all messages input via the web page.



Status in italics may occur only at system level

*To maximise the BCP nature of the core GCCM D&R function, this manual entry process will be consider non-core and is effectively another feeder process to the core of GCCM. In essence the manual input function will be a separately application that can fail without affecting other parts of the D&R system.*

As a result once a message has been 'Released to GCCM for processing', it will be sent to the Gateway where it will be treated as any other source system and amendments requests will need to pass through the Gateway as the record that will be released will reside in a separate database.

It is expected that the web input process will allow both direct input and batch upload from say an Excel or CSV file to allow groups with large number of transaction request but no automated feed to input multiple requests simultaneously. This process will also be available as back-up option should an event occur to a TIBCO linkage between one of the source systems and GCCM.

##### 4.1.2.1.1. Tracking Information automatically added to record

As part of each record created via the web input function the following audit information will be retained.

Field	Character	Comments
Version Date and Time		
User		
Version		Version of message
Status		Status in version
Payment Ref		Uniquely generated by system – does not change
Security Code		Unique check sum created at release to GCCM. To be used for authenticity.

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The following sections outline the options available to users via the menu from the web input function.

#### 4.1.2.1.2. Provisional Input / Input

Once a user has decided to create a manual request and has accessed the input function, they will be presented with a basic menu giving them the ability to create a new request from scratch or a new request from a predefined Template. Note access to templates will be restricted at the user level to users within the same control (Operations) group.

New Requests all start in a Provisional Input status.

##### 4.1.2.1.2.1. Required Information:

As a minimum the following information must be completed in the New Request screen for the Input function to generate a payment or preadvice record.

Field	Character	Comments
Ordering Internal Business Account Number		Account to be debited or credited
Currency	3 code	
Currency Calendar	3 letter city code	Added once CCY input automatically
Amount	Up to 1000 bn	Debit indicates payment Credit indicates receipt
Value Date	Format should be as PC in use	4 char year Back valued inputs to be allowed
Beneficiary Account Number		Not a required field but user should be able to add GARM account number or GCCM account number If debit amount then this is where payment goes If credit amount then this is where funds are expected from - re credits see later
Users refs	Text	If supplied append to posting info and message
Additional Info	Text	If supplied append to posting info and message
Payment Urgency	Defined list	Only available to certain users?

##### 4.1.2.1.2.2. Identifying Beneficiary Details

To support users that may be not be able to supply details of the GARM id of their client, for example as they are familiar with their client's ADP or RISC accounts numbers only, D&R should allow users to

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initiate a search of GARM to identify the correct GARM id using the account numbers from one of the other settlement systems.

#### *4.1.2.1.2.3. Restricted Accounts*

Note that there is a concern about whether users should be able to create payments for all GARM ids, in case GCCM D&R could be used as way to by pass the correct margin approval processes for customer accounts. Therefore it may be that after consolation with the appropriate groups users may not be able to input payments against certain account ranges / GARM ids and instead users will be directed to process through an alternative system.

*Open question:* need to check with GARM that clients that need margin approval are contained within limited ranges rather than spread through the system; if not how do we identify clients?

#### *4.1.2.1.2.4. Available Actions*

Once user has input a basic request they should then be able to save the message into:

- A Provisional status with only certain checks being carried out,
- An 'Input Complete' status.
- New Template
- Or Cancel the message

As part of the process for saving a message into an 'Input Complete' status certain basic checks will be carried out (the basic checks are included in the notes below). Items that fail a check should go a Require Repair status and a note should be made available of why the item failed.

In a Provisional status the message can be amended and the user can then save the message into a Provisional status with only certain checks being carried out or into an 'Input Complete' status. A message can go through Provisional Input a number of times.

Items in a Require Repair status can be amended by the same user who input the message.

'Input Complete' is action undertaken by the user and in background the status should move to Assign SSIs if the request passes the data checks.

No further action can be carried out on a Cancelled Message.

#### *4.1.2.1.2.5. Template Required Information:*

When a New Request is saved as a template then the following additional information is required to control access to the template going forward:

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Field	Character	Comments
User Name or Ref		Along with CCY provides unique id for users
System Unique id		Generated by system
User Group	Defined list	Default to same as User
Comment / Template Group		Available to users to add comments to be able to identify groups / sub-sets of their templates by

#### 4.1.2.1.3. Message Retrieval for Further Action

To allow user to update messages then they will need to recall a message from the database.

To recall a request users will Open the request using either the trade id or via a filtered list. Options for the filter should include:

- All
- All from Template
- All from User Group
- All in CCY
- All in Account
- All in Status
- A combination of Template, User Group, CCY, Internal Business Account, Status
- Value Date
- Amount
- Beneficiary

The expectation is that users will only want to see items not released to GCCM at this point but they should be allowed to select a flag that would allow them to include items already processed.

#### 4.1.2.1.4. Assign SSIs

##### 4.1.2.1.4.1. Auto-completion of SSI data

If a GARM id or a GCCM Internal Business Account number has been added as the beneficiary of the request, the system will recognise this and either retrieve the SSI data for the beneficiary from GARM or note the presence of the GCCM account number (in this case SSI data would be available in the core function part of GCCM D&R and so is not required at this stage).

It has been suggested that D&R should review the account numbers versus GCCM D&R records prior to checking the account number with GARM to complete the SSI data.

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In either case the message will automatically move to the next internal status, which is Pending Approval. (The version tracking information will update as to reflect this automatic update).

*4.1.2.1.4.2. Manual completion of SSI data*

If the beneficiary GARM / Internal Account fields were blank at the input stage then the message will remain in an Assign SSI status until recalled by user and the relevant details completed. The necessary and available fields should be based on SWIFT message fields.

In this status users cannot update a field input at an earlier stage and so they should Reject the message or save into a Provisional Input stage if they need to amend a non SSI field.

*4.1.2.1.4.3. Required Information: -*

The following information will be required (the exact options will be confirmed as part of the next level of system specification):

Field	Character	Comments
Ordering customer		
Payment Type		103, 202, Cover or 210 say
Intermediary	BIC code	If BIC is not used then FW, SC or equivalent should be present
Account With Bank	BIC code / Text	If BIC is not used then FW, SC or equivalent should be present wherever possible
Account Holder	Text	
Account Number	Text	
Charges	3 letters	BEN / SHS / OUR
Additional Info for Swift Message	Text	

Once user has assigned detail or if they wish to amend details they cannot edit, they should then be able to save the message into:

- A Provisional status with only certain checks being carried out,
- Pending Approval status.
- New / Updated Template
- Repair
- Or Cancel Input

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#### 4.1.2.1.5. Approve Message

Users should be able to recall messages as above for approval and while they cannot amend data they should be able to review all details.

Once the authorised user is satisfied, they should then be able to save the message into:

- 1<sup>st</sup> Stage Approved status.
- Repair
- Or Cancel input

##### 4.1.2.1.5.1. Preadvice Notifications

For credits to an account (Preadvice) at this point GCCM will need to review the static data on the quoted account to determine if further level(s) of authorisation is (are) required. If not, then the message should be transmitted / passed to core GCCM process and the status updated to reflect this.

In turn the second approver should be able to recall and review the message. Once they are satisfied they can then save the message into:

- 2<sup>nd</sup> Stage Approved status.
- Repair
- Or Cancel input

Note to promote the use of preadvice notifications in the US to add intraday forecasting and to simplify matching of incoming funds to an Internal Business account, D&R should allow for either:

- the auto-approval of preadvice notifications for a limited range of Internal Business accounts
- or the user who input the notification to also approve the notification

If agreed then this process would be the only allowed exception to the principle of four eyes review of every request (that is at least one inputter and one approver for every request).

##### 4.1.2.1.5.2. Payment Requests

For all payments, the input requested should await at least a further level of approval.

In turn the second approver should be able to recall and review the message. Once they are satisfied they can then save the message into:

- 2<sup>nd</sup> Stage Approved status.
- Repair
- Or Cancel input

At this point GCCM will need to review the static data on the quoted Internal Business account to determine if a further level of authorisation is required. If not, then the message should be transmitted / passed to core GCCM process and the status updated to reflect this. Otherwise the message should await further approval.

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In turn the third approver should be able to recall and review the message. Once they are satisfied they can then save the message into:

- 3rd Stage Approved status.
- Repair
- Or Cancel input

At this point GCCM should be transmitted / passed to core GCCM process and the status updated to reflect this.

#### 4.1.2.1.6. Payments Rejected by GCCM Import process

It is possible, depending on the build of the core D&R module, that requests may be rejected by the GCCM import approval process. The core module will then attempt to return the requests to *the appropriate source*.

For messages input using the web browser this would be the GCCM manual input process. If this occurred then the message should go back to a repair queue where the initial core and SSI data can be amended. Once repaired the message should go into a Pending Approval status. (Each approval stage that the original message went through will need to be repeated though the user approving does not have to be the same at each stage.)

After the approval process has been completed, the amended message will be distributed back to the GCCM Gateway.

#### 4.1.2.1.7. Notes

1. The screen for payment input should be web based and accessible through Lehman Live.
2. Only pre defined users should be able to input / assign / approve / save as template a message. Input / Assign users do not have to be Authorised Signatories but Approvers must be.
  - a. Authorised Signatory lists are tracked through the Treasury Signature database and this approval process should validate against the list in the database daily.
3. Users will be defined against a range of Internal Business and external nostro accounts so if they quote one they have no access to then this should reject
4. Copies of each version should be stored
5. Inputs saved as Templates do not require a value date and can be assigned a name or ref by the user.
  - a. Templates may have SSIs assigned but these cannot then be amended
  - b. Templates can be restricted to certain User Groups
6. Check should occur whether request is back valued or not and this should be flagged to user and they approve second time
7. Assumption is that back valued flows are allowed so we would generate external Swift message and also generate 299 requesting value
8. Check should occur that the Internal Business account and currency are valid combination
  - a. *Open question do we allow cross-currency inputs? If so then we need a process to 'get rate' and process correct accounting*
9. Check should occur that currency and value date are valid combination vs. currency calendar



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- a. If not but an alternative calendar exists for the currency then the users should be allowed to override.
  - b. The check should then be repeated
10. Check should occur that currency and value date are valid combination vs. currency funding deadline. Override should be allowed by flag later for CM additional approval
11. If Beneficiary or Ordering Party Account Number blank input cannot be saved for current or future value dates to release status. Must go to a pending SSI assignment status.
12. A message cannot stay in an unapproved status indefinitely, so an automated clean process should start after 2 or 3 days (make flexible) which puts message into a Cancel status.
13. Certain fields will require search facilities to allow user to find the correct record. These include Account Number, CCY, CCY Calendar and BIC code.
14. Message should appear with unique reference from 'manual input' database as separate unprocessed / un-accepted activity on internet statement of Internal Business account but not be sent to GSSR / paper statement until accounted for
15. It is not expected that more than three levels of authorisation of a message will be required, but should we allow for this?
16. Messages should be passed by TIBCO to GCCM core module
17. The input module should allow projection figures with the appropriate flag set to be passed to GCCM. To get around system restrictions could we consider using code word Projection in Beneficiary account field

#### 4.1.2.1.8. Bulk File Upload

As noted before it is expected that the web input process will allow both direct input and batch upload from say an Excel or CSV file to allow groups with large number of transaction requests but no automated feed to input multiple requests simultaneously.

For users to be able to load a file of completed payment instructions including SSI data into D&R, a load function should be available on the new payment screen. The function should allow users to browse their network connections to find the file of payment and receipt requests.

To prevent users accidentally loading the same set of payments twice, the file of requests should include at least a unique reference for a series of requests (a series of request could be the entire file of messages) or preferable a unique reference per request. This unique reference field should be stored along with each payment request created. The file should then be retrieved by GCCM D&R and should then attempt to create a series of new requests based on the data supplied. As a first step in this process the unique reference field should be compared with the reference already stored. Any requests containing a reference that has already been used should be flagged back to the user and should not create a request.

All messages should go into the same state as if they had been input manually into the web input function.

##### 4.1.2.1.8.1. Bulk Approvals

Should D&R allow users to highlight a number of requests and approve these simultaneously or should each request be approved individually?

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#### **4.1.3. Other Messages Processed by Gateway: Incoming Requests Other and Outgoing Messages:**

The following types of records will need to either be pulled in or sent to GCCM to allow it to calculate and accurately reflect the balances and entries through real world nostro accounts

##### **4.1.3.1. Daily Balance Report from GSSR or MT950s – Ref 1.5.2.1**

Each day to be able to track the actual start of day balance on an external nostro account and to use this to calculate the expected / projected end of day balance from this number, GCCM will need to source the balance data on each nostro account.

This could be done either from the individual original statements sent into the Firm (via SWIFT) from the various Agent Banks or it could be by allowing GSSR to first process the statements and then extract the balances from GSSR.

Note currently GSSR does not segregate or flag real world accounts differently to internal only reconciliations. Therefore as part of the processing the balance file will need to be filtered and only the real world balances extracted.

This is currently done manually by keeping a separate record of all GSSR accounts and identifying them as internal or external with CCM. This has the slight advantage that every time a new reconciliation is set-up in GSSR it is flagged to CCM straight away but is significantly time consuming.

##### **4.1.3.2. MT900, 910 or equivalents from payment channels – Ref 1.3.3.1**

To be able to track the settlement of payments and receipts across the Firm's various nostro accounts intraday and allow time to follow up on fails, GCCM needs to be able to:

- track and match incoming confirmations of activity from the banks by nostro account
- then update the status of the individual records in GCCM

While a variety of confirmation processes exist including phone and bank website, GCCM should be able to cope with at least the Swift standard MT900 and MT910s and in the future the Chase / Citibank proprietary feeds or the Cable and Wireless XML feed. The Gateway will need to take the incoming data and convert into a format that can be read by the GCCM Matching process to match the confirmation with the underlying item.

##### **4.1.3.3. Reconciliation Postings – Ref 1.1.3.1**

After the Firm's has reconciled its nostro accounts a number of postings (to clear unpre advised, fees etc) are always identified for posting after value date. Once GCCM is live these postings will need to be sent from GSSR into GCCM to true up the book closing positions with the real-world balances for the nostro accounts.

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These entries could either be automatically feed from GSSR or (more likely?) via an Excel file. If via an Excel file then items should go through web-page file upload process.

#### **4.1.3.4. Query and Response Traffic**

To minimise the workload that will be imposed on the GCCM database at any one time, no direct access should be allowed to the database. Instead all incoming data requests that would involve a call of the database should be 'filtered' by the Gateway to ensure:

- Queries are structured in the most efficient manner for the database
- To prevent large data calls slowing performance
- To hold queries back so that payment processing usage takes priority at key points of the day or if processing has been slowed below an agreed performance level.

#### **4.1.3.5. Outgoing Traffic**

The Gateway will be responsible for managing the connectivity between GCCM and the Firms other systems and will need to be able to process the following (a number of these steps are dealt with more thoroughly later in the BRD):

##### **4.1.3.5.1. Acknowledgements to Source Systems**

For each message request that comes into GCCM D&R an acknowledge needs to be sent back to the originating system confirming receipt and all status changes through the lifecycle of the instruction. The exact formats of the acknowledgements will be specified as part of the next stage of the system specification process.

##### **4.1.3.5.2. Repair messages**

For systems that can take in and handle items that require repair, the Gateway should convert the instruction from the GCCM format into the appropriate format for the system that original generated the request.

Also where items are to be pushed back out to an individual for repair, GCCM should request an email is sent notifying the individual of the fault via the Gateway. If possible the Gateway generated email should either link back to the underlying item or to the repair screen.

##### **4.1.3.5.3. GARM – Ref 1.1.2.2**

GCCM D&R will communicate with GARM to source Standard Settlement Instruction (SSI) data for requests that have been sent with a client GARM id rather than complete SSI data.

Longer term it is possible the GCCM D&R will be updated to validate all SSI data sent to it against the records held for a client in GARM.

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4.1.3.5.4. Payment channel messages

Once an item has been released from the Intra-day Release queues, GCCM should pass it to the Gateway for onward processing. The Gateway should strip out any extraneous information that is part of the GCCM but is not required for the payment channel.

The Gateway should then authentic (and encrypt) the individual message or file and pass to the indicated payment channel via the most appropriate methodology.

4.1.3.5.5. Statements to GSSR – Ref 1.5.3.1

Each account within GCCM should be set-up so that a copy of the entries across it can be passed to GSSR for reconciliation. As much information retained about an individual record on an account in GCCM should be sent to GSSR.

GSSR would then be responsible for taking in as much as it can handle.

GCCM should also be to create formal Swift MT950 messages.

4.1.3.5.6. Accounting entries to DBS – Ref 1.5

As part of GCCM purpose is to host the in-house bank, it will be a sub-ledger and as such will need to deliver accounting entries to DBS on a daily basis. The Gateway will be responsible for taking the accounting journals created by the in-house module and delivering them to DBS in the most effective manner.

It is hoped that this can be done intraday by leveraging the sub-ledger work being undertaken by Finance. Further details on accounting are available in chapters 7 to 9.

4.1.3.5.7. Interest accounting entries to GID / Debt Database – Ref 1.5.3.7

In a similar way to DBS, as part of GCCM purpose is to host the in-house bank, it will be a Treasury sub-ledger and as such will need to deliver accounting entries, such as those related to intercompany interest P&L, to the GID (Debt Database) on a daily basis.

The Gateway will be responsible for taking the accounting journals created by the in-house module and delivering them to the GID in the most effective manner.

4.1.3.5.8. Automated reports

GCCM is likely to have some automated reporting functionality based around queries to the reporting database with certain reports generated by GCCM emailed out to users.

GCCM should send an email notifying the agreed distribution of the report via the Gateway. If possible the Gateway generated email should either link back to the underlying report or to the Lehman Live deployed version.

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#### 4.1.4. Process Name: GCCM Import – Ref 1.1.2.1

To write data sent from the Gateway to the GCCM core database.

##### 4.1.4.1. Basic Process Flow of Import Function

Once a message is in a GCCM Import queue as a result of being accepted by the Gateway, the message should be read by the GCCM Import function.

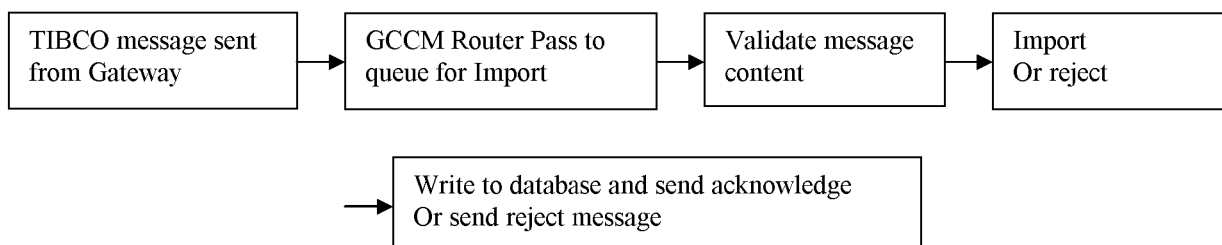
The import function should have active management of the queues; processing items that come into an urgent queue for an open currency window first whereas items that are flagged as internal only traffic by the source systems can be held back to be processed during quiet times. Multiple queues should work in parallel.

The following is a suggested processing prioritisation:

1. Urgent
2. Items of currency with next funding deadline
3. Items with value date today
4. Items with forward value
5. Internal items

As part of the Import function GCCM should initially validate a message to ensure that sufficient information has been sent by the source system to generate a database record. If a message fails this process, then GCCM should send a rejection notice back to the source system.

If the message passes GCCM should create a message in its database in a Pending Processing status and create a unique ref for the message. The unique ref should be passed back to the source system



##### 4.1.4.1.1. Required Information to generate a GCCM database record:

Field	Character	Comments
System id		
System unique ref		
Time sent from System		
CCY		
Amount		
Value Date		

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Business Account payee/ Receiver		
Debit / Credit indicator		
Beneficiary account		Could be GARM id, GCCM Account number or 3 <sup>rd</sup> party account id.
GCCM unique id		
GCCM status & version		

4.1.4.1.2. Optional Information to include in a GCCM database record:

Field	Character	Comments
Mandatory Swift fields		Including Travel Rule info
Optional Swift fields		
Other additional Info		
GARM id		
Message type		
Message priority		
Legal entity		
User who released		
Internal only movement flag		
GCCM user amendment		
GCCM checks status		
Posting Date		Date item is shown in cash-flow
Effective Date		Date sent to system
Provisional Figure Indicator		

4.1.4.1.3. Message Warehousing

The system should allow messages to be received nine working days forward of the value date required; that is if today is 1<sup>st</sup> October the system should accept requests for forward value up to the 14<sup>th</sup> October.

These requests should then be warehoused on behalf of the originating system until nearer the value date at which point they should be generated into a pending release status for manual or automatic release, as appropriate for the external cash nostro, to the chosen cash settlement process.

External messages should be generated a set number of days in prior to value and not before; for example for a payment received on 1<sup>st</sup> value 14<sup>th</sup> for USD the external message does not need to be created on first but say on 13<sup>th</sup>. The period forward of value that messages should be generated should be set as part of the currency / external nostro account static.

The system should discount weekends and global holidays from its forward / back value date count but if at least one currency is available on a day then that day should be counted as a working day for the system and so contribute to the days maintained on the system. For example 25 December is a valid value date for JPY (assuming it does not fall on weekend) and so the system should be open.

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4.1.4.1.4. Notes

- TIBCO, MERVA / MINT and SWIFT all allow process flags to be set. GCCM will need to accept and potentially prioritise traffic based on these flags.
- GCCM Gateway queues will be system specific but GCCM Import queues should not.
- It should be easy to add further Import queues and there should a load bearing function that takes allowance of incoming priority and waiting times (1/lamda).
- A rejection could, for example, occur if the debit Internal Business account number quoted does not exist in GCCM.
- GCCM should allow source systems to send amendments or even cancellations down to GCCM by quoting the GCCM / their unique reference for a request. Need to be specific on controls to prevent duplicate records being created and point at which a change becomes irrevocable.
- ALM would like to include the possibility of source systems sending Provisional or Forecast numbers through to GCCM to be used within the forecast process. To handle this it is proposed that a Provisional Figure flag can be sent as part of the message from a source system. If this is set to yes then the GCCM record should be created but saved into a Provisional Figure status. These numbers would then appear in the appropriate currency balance in a Provisional Column but would not be passed through the STP, Settlement or Accounting Engines of GCCM.

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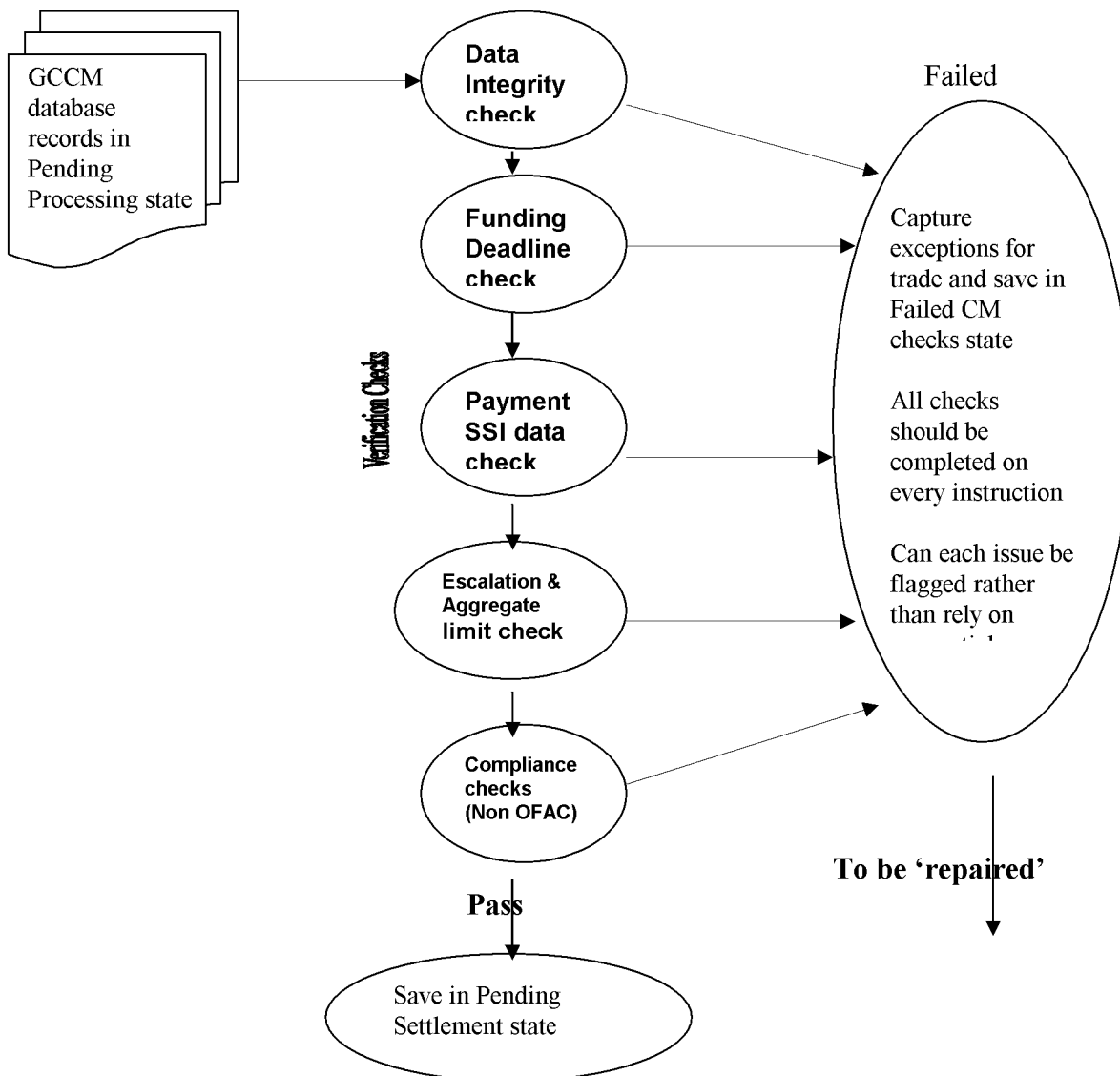
#### 4.2. D&R: Detail of Message Content Validation (STP Engine) – Ref 1.2

To review the content of the information supplied by initiating systems to ensure that message can be funded and settled STP before creating accounting and any external message traffic.

##### 4.2.1. Basic Process Flow for STP Engine – Ref 1.2.1

Once written the GCCM core database in a Pending Processing state, the message should be passed through a series of checks before being authorised and passed to the next stage Pending Settlement. The initiation of this validation should be automatic and run continuously with multiple messages being checked in parallel. Items that fail one or multiple steps will need to be ‘repaired’ and notification of this will need to be passed to the source system

This is a high-level overview of the proposed flow (based on the London AVE model).





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Each of the checks above will be laid out in their basic form in the following subsections; however the system should be able to deal with the adding of rules to the individual validation processes, the addition of further validation processes or the re-engineering of a validation process in an easy to implement way.

If possible a graphical user interface should be created to allow creation / amendment of individual rules. (It is expected that the re-engineering of a particular validation process would involve technology support.)

All the checks should be undertaken on each request altogether; that is each request should be validated against each check in the process once the request is selected by the STP Engine and the results of all the checks should be presented together. Requests that pass every check should move to the next stage of the payment process. Items that fail one or multiple checks should in general go to a repair queue and further processing halt. Failed items should still be reporting in the currency position numbers to ensure the Firm is correctly funded.

Note failure of a check does not automatically mean a message will be rejected just that it needs further analysis or processing. In general items that fail one or multiple steps should be saved into a Failed STP validation state. Specific fails such as Beneficiary is an Internal Business account will bypass certain GCCM stages and will be saved into the appropriate GCCM state.

How repairs are to be handled will be dealt with elsewhere, though it should be noted that once a repair is completed on a particular record, if that record is saved into a Pending Processing state then it will need to go through the checks again.

The payment channel that would be used to settle a transaction will be determined after this point and so the payment quality checks detailed here will cover the minimum requirements using Swift standards as a reference. As and when GCCM connects to other payment channels additional standards may need to be incorporated or rules amended to cope.

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#### **4.2.1.1. Process flow after the STP Engine**

Once an item has passed through the STP Engine (passed or failed), requests should be split between internal and external movements. Internal movements should be sent to the Accounting Engine for immediate processing while external requests should start to appear in the Currency Position report.

Initially external requests should appear in the unassigned nostro column however the system should automatically begin the process of assigning the request to an external account for settlement. How the system should choose the external account to be used is outlined in section 4.3, as is a description of the process of choosing between payment channels, should more than one opportunity exist, for the settlement of the request.

Once an item has been allocated to an external account, the request should appear in a Pending Settlement status if the request passed the STP Engine or a Pending Repair / Pending Approval column if the request failed one or a number of the checks.

Note if the Pending Repair / Pending Approval items are split into two columns then any request that has failed multiple checks such that the messages requires repair by the originator and approval by Cash Management should appear in the Pending Approval column only. (Once the approval(s) have been completed then the item could theoretically be moved into the pending repair column if the repairs were still required – CM could repair simple items without reference back to Ops. This process should happen automatically as a result of the request being resubmitted to the STP engine once it has been repaired.)

Messages that have been entered that are intra Lehman flows that must be settled via cash movements, for example nostro account funding movements, to be denoted by the coding FUND, will need to be processed in a manner that would minimise the physical cash settlements and also reduces the potential for intercompany exposures to be created. This will occur through the netting of payments between Internal Business accounts and the routing of net movements via the entity linked to the Business or Originating account that is responsible for the overall funding of the entity the originating accounts resides in. It is possible that to further reduce activity the STP engine should populate the SSI data based on Funding Entity linked to the originating account overriding any direct payments.

Finally to allow for further currencies becoming Euro In currencies in the future, GCCM D&R should auto convert payments or receipts in an in-currency once they have passed through the STP engine to their Euro equivalent. The system should input the payment into the Euro nostro account for processing and funding rather than an in-currency nostro (though it should be able to show the original in-currency transactions broken out if required) and send the instruction out noting the original currency amount.

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#### 4.2.2. Process Name: Data Integrity Check – Ref 1.2.1.1

To ensure that the basic information that has been sent to GCCM by a source system as part of a payment request or receipt notification is meaningful and can be used to settle the request. The data contained within the GCCM database should be passed through the following checks to ensure that it can be processed within the system.

Field (s)	Check	Response to NO
Beneficiary	Is this not a GARM Id present?!! If no then is SSI data supplied	If both no call complete SSI data from GARM. Additional details should then go through other checks.
Amount	Is less than 1	Flag as failed and note
CCY calendar	Is present and valid for CCY	Append default calendar code to record if one is already present or invalid
Value date	Is the date a valid business day for selected calendar	Flag as failed and note
Value date	Is it current or forward value date	Flag as back-valued entry but pass at this stage to be process differently later
CCY	Is CCY valid for quoted business account	Flag as failed – will either require changing or special FX processing
Internal Movement	Is this not an Internal Request	Step over to Compliance checks Auto-pass and route messages to accounting processes bypassing section 1.3
Originating Account	Is this marked as Seg. or SPV	Flag for careful processing later
Beneficiary	Is this not a Lehman Internal Business Account quoted	Flag as internal only movement (update a separate field) and step over to Compliance checks
Beneficiary	Is this not a Lehman External Nostro Account quoted	Flag as intra Lehman movement (update a separate field)– In particular need to be aware if this an internal payment that can be settled via in-house bank versus nostro account funding which must be moved
Beneficiary	Is this not the same as Ordering Account	If intra Lehman movement then flag as funding and pass. Otherwise fail and note

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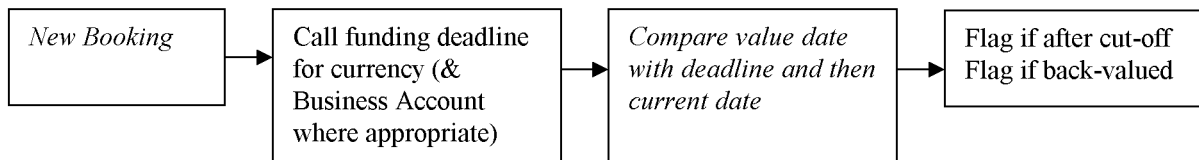
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#### 4.2.3. Process Name: Funding Deadline Check – Ref 1.2.1.2

To ensure all funding requests (outgoing real world debit or credit requests) requests can be funded and processed with value.

To check that for the currency of the requested movement the Firm can still economically funds the transfer. Any requests that are received by Cash Management after the funding cut-off are processed on a best effort's basis for the value of the funding request or paid on the next available value date.

Back-valued funding requests will require additional approval and processing.



GCCM should flag any funding requests that are received after a cut-off or if the request indicates a back-valued movement. As with the authorisation of Escalations, Cash Management only will have to either accept the funding request or change the value date of the request after referring to the originator of the request.

For back-valued requests, the value date of the request will be changed to the most appropriate value date to fund the transaction. The originator of the request should then receive notification of the change and a request to approve (via an email containing a web-link?) any costs for the back-valuation to the quoted value date. Once the back-valuation approval has been received GCCM should create a request to the appropriate agent bank that will handle the movement to back value the transaction.

##### 4.2.3.1. Funding Deadlines Table

It will be necessary to maintain a default matrix within GCCM (that is to be updated by CCM) which will list the currencies and the time funding cut-off in the form of a time (in Greenwich Mean Time, GMT) and day count.

For example:

TWD, S-2, 10:00

Where TWD refers to Taiwanese Dollars, S-2 is value date minus two working days, and 10:00 is 10:00 am GMT. Note the cut-off should be converted to the local time for the Cash Management users.

Also due to specific business requirements certain Business Accounts will be allowed to override the default cut-off and so the table will need to store the Business Account and its specific cut-off (in a similar way).

All funding requests input into GCCM should be assessed against this rule set/matrix and any fails reported to the verifier of the message.

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Note

- 1) Funding Requests generated by Cash and Collateral Management user groups should be exempt from the deadline checking process.
- 2) GCCM will be set-up to recover the costs of funding an item by going overdrawn or incurring late same day funding costs by imposing a one-off fee for each late request on the originating Internal Business account.

4.2.3.1.1. Extension to Funding Deadline table

Further to the simple table noted above, it has been discussed adding into the table the possibility of checking deadlines for specific payment channels in addition to the overall funding of a currency.

This additional checking would be used to determine of whether a particular request could be sent via the payment channel suggested by the formatting of the message / size of the request or whether CCM users should redirect failed items.

For example:

USD, S, 21:00, ACH

USD, S, 22:00, FED

Where USD refers to US Dollars, S is value date today, times shown are GMT and:

- ACH refers to Automated Clearing House
- FED refers to FED Wire

**4.2.3.2. Authorisation**

Unlike other repairs which will be handled primarily by non-CM users it is expected that funding deadline exceptions will only be handled with Cash Management. However handled the Verify process should record the verifying user's UserId, so that even if someone else subsequently amends the trade, it is possible to see who verified the escalation.

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#### 4.2.4. Process Name: Payment Quality Checking - Ref 1.2.1.3

To set up a table of rules against which all payment and receipt instructions would be validated against and either rejected or accepted.

**Note: This document use Swift standards as its reference. As and when GCCM connects to other payment channels additional standards may need to be incorporated.** The following is heavily based on the payment quality work undertaken in London Cash Management.

SWIFT message formats are generic globally and any breaches of compliance with the SWIFT message standards will be either rejected by MERVA, the firm's SWIFT interface, or rejected by SWIFT through a negative acknowledgement (NAK). However, SWIFT standards can allow free format text in fields within the message, the use of incorrect account number or clearing code structures<sup>1</sup>, the omitance of optional fields that may be required in some cases, etc. The fact that messages can be structured with non-generic data means that correspondent bank's systems may not be able to process the payment automatically. Over time the rule set will be expanded to address the nuances in different countries, clearing systems and in some cases banks.

Payment channel and correspondent bank specific formatting will be taken care of at the point the outgoing message from GCCM is created. This will be covered in later in the document.

To speed up the development and implementation process the message and currency rule sets will not be exhaustive as to cover every conceivable issue that may cause a message to fall into repair. Therefore, the table that contains the rule sets should be able to readily accept additional criteria.

Figure 1 shows the fields that need to be checked for payment quality. Note at this stage it is not intended to develop significant quality analysis on MT210 messages.

Figure 1

Fields	Definition	MT103	MT202
50:	Ordering Customer		n/a
52:	Ordering Institution		n/a
53:	Senders Correspondent		
54:	Receivers Correspondent		
56:	Intermediary Bank		
57:	Account with Bank (Beneficiary's bank)		
58:	Beneficiary	n/a	
59:	Beneficiary		n/a
70:	Information for Beneficiary		n/a
72:	Additional payment details		

<sup>1</sup> All SWIFT bank identifier codes (BICs) are validated by MERVA before transmission to SWIFT.

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The field numbers 50 through to 59 detailed in Figure 1 should be represented in GCCM via a BIC field and a free text field equivalent to A or D formatting. For record keeping GCCM should be able to have generic field names to prevent duplication at this point, as this specific formatting may not apply for each payment channel available to GCCM; for example GCCM will not need to store fields 58 & 59 separately.

Note to cover all eventualities fields 70 & 72 should be stored separately.

#### 4.2.4.1. Rule Set

The following are the main rules, from a SWIFT perspective, that need to be applied to ensure a minimum level of payment quality to enable our correspondents to process most payments cleanly without repair.

##### 4.2.4.1.1. Rule 1

If message type is not defined, then check beneficiary field. If this contains a BIC then set message type as MT202 otherwise set message type as MT103.

##### 4.2.4.1.2. Rule 2

Ensure that no characters that are restricted in SWIFT have been placed in message anywhere; for example "&"

In fact consider auto-replacement of common failures with equivalent characters; so for example "&" replace with "+"

##### 4.2.4.1.3. Rule 3

Any field in the 50 range used in the MT202 should have an 8 or 11 character BIC in the field.

##### 4.2.4.1.3.1. Exceptions to Rule 3

For STP purposes a BIC is not always required in fields 56 or 57 provided a clearing code for the institution is quoted. If a clearing code is used i.e. a CHAPS sort code or Fed Wire / ABA reference, the code should be in the text field in GCCM.<sup>2</sup>

##### 4.2.4.1.4. Rule 4

If the ultimate beneficiary is a financial institution with a BIC code the message type should always be a MT202. A BIC address should never be quoted in field 59 of a MT103, if it is the message should be a MT202

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<sup>2</sup> A list of the codes and number of digits used in clearing codes can be found in the SWIFT user guides.

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4.2.4.1.5. Rule 5

Field 72 should not be used unless absolutely necessary unless using the acceptable code words detailed in the SWIFT user directory, i.e. /TELEBEN/3.

Therefore, reject messages with field 72 information unless a code word is used.

4.2.4.1.6. Rule 6

In an MT103 if field 56 and 57 are used Rule 1 and its exceptions should be applied.

4.2.4.1.7. Rule 7

The absence of data in any mandatory field, 58 and 59 in a MT202 or 103 respectively<sup>4</sup>

4.2.4.1.8. Rule 8

Field 52 of a MT103 should always be a Lehman specific BIC.

4.2.4.1.9. Rule 9

All BICs should be valid published BICs in the current SWIFT directory as published on a quarterly basis.

4.2.4.1.10. Rule 10

For notifications of incoming funds, MT210s, the Internal Business and external nostro account to be credited and ordering customer / institution fields should be present.

#### 4.2.4.2. Applying these Rules

Given the number of rules Figure 2 is a simple decision tree on how to apply rules.

**Check 1 - Field sent to check is:**

- Not blank
- Is BIC code present
- If BIC code present, then test against valid BIC codes
- If BIC code is not present, then check for presence of valid clearing code test e.g. SC for sort code

**Check 2 - Field sent to check is:**

- Is non-blank
- Is not SWIFT Code

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<sup>3</sup> A list of code words and their usage can be found in the SWIFT user guides.

<sup>4</sup> This would be picked up by MERVA if input directly but if SSIs are not assigned then will GCCM make a payment?

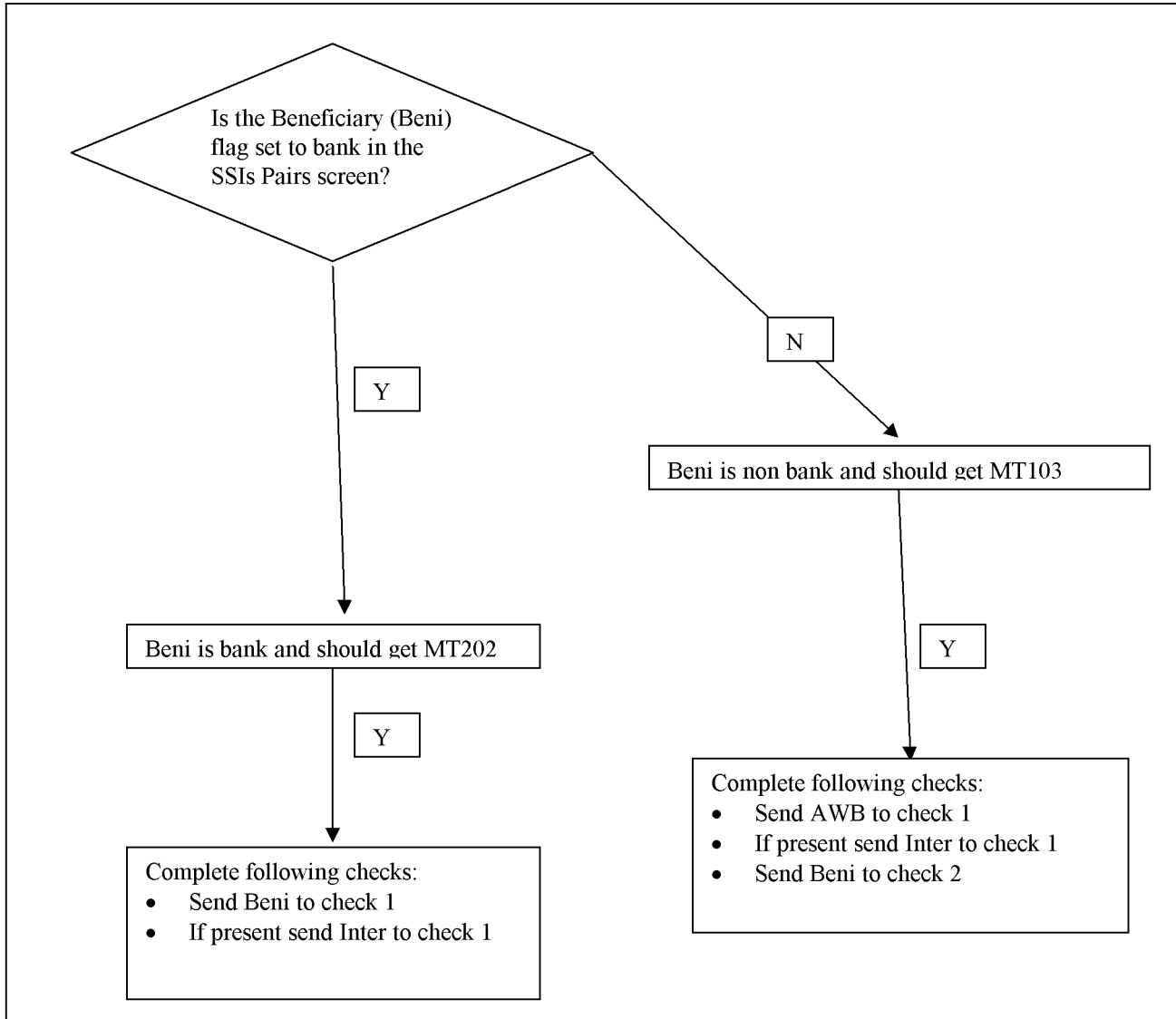


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If a message is rejected due to a payment quality failure the original instructions should be retained with just the problem area(s) highlighted.

Figure 2



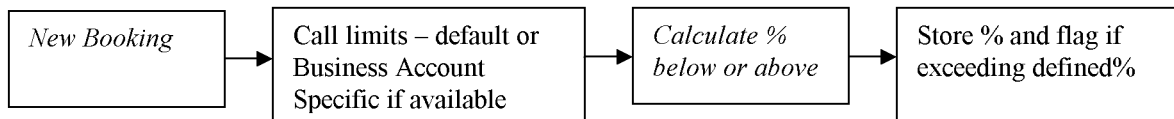
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#### 4.2.5. Process Name: Transactional Escalation Checking – Ref 1.2.1.4

To compare the current request against historical trends recorded for a Business and / or a specific Business Account and identify unusually large amounts.

Ensure all funding requests for each business are within that business's funding limits. Any request that exceed these limits should be escalated to different management hierarchies dependent on the percentage size of the limit exceeded.



Once passed through the data integrity checks payment request (outgoing real world debit requests) should be compared against the default limit for the Business Account quoted on the request. Internal movements and receipts should pass through check so percentage is recorded but should not fail validation.

Any payment requests that exceed the defined level will fail this control. At this point the payment and associated postings should be suspended until the appropriate authorisation from the CCM management team has been granted. The system should allow on-line authorisation by the CCM manager or by a CM user on behalf of a manager.

##### 4.2.5.1. Escalation Table:

As each Business Account is set-up its escalation level should default to a level of USD 50,000 equivalent. Users should then be able to update the level for the Business Account as part of the account set-up.

If Business Accounts are considered multi currency then it will not be practicable to set up each Business Account with an escalation level for all the currencies that it can be used for. So to compensate a default level of USD 50,000 equivalent should be used unless a Business Account has an escalation level for the currency of the request. It should be sufficient to calculate the currency equivalent of the default level simple using the prior working days FX rates.

For simplicity it should be possible to set escalation amounts at the business level and have these escalation limits flow down to all Business accounts owned by that business line.

In addition certain currencies may be blanket forced to an amount level of zero to act as a control for restricted or no longer active currencies. In these cases the limit cannot be overwritten for an individual Business Account and all activity must be approved.

Though the default level will exist, it is assumed that each Business / Business Account will require a level, some of which will be set manually while the majority will be defined through an overnight calculation process.

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Business Account escalation levels that have been set manually should not be automatically overwritten by the overnight calculation process. In addition there will need to be a user interface will be required to input and maintain the table of escalation criteria by Business Account / Currency.

#### **4.2.5.2. Overnight Calculation**

To set the escalation limits GCCM should undertake the following calculation on a daily basis:

- Retrieve 6 months of payment request (outgoing real world debit requests); minimum of one month's data required
- Calculate mean and standard deviation of the requests by Business and then by individual Business Account
- The limit will then be a formula driven calculation:
  - Initially it is likely to be mean and 2 standard deviations (95% confidence interval) for the overriding Business
  - Though it the longer run the formula should look to identify outlier events on a more detailed basis and potentially exclude these items from the calculation process.

GCCM should use the results of the calculation to overwrite the limits used the previous working day. It should also record and report where there has been a significant value change in the limits between the two working days as this may reflect a one-off transaction that does not reflect the activity through the Business Account and should be exclude from the calculation process. GCCM should then allow the appropriately authorised user to flag a historical movement so that it is excluded from the Escalation calculation process and rerun the calculation process for that particular Business Account.

#### **4.2.5.3. Authorisation**

Unlike other repairs which will be handled primarily by non-CM users it is expected that escalation approvals will only by handled with Cash Management. However handled the Verify process should record the verifying user's UserId, so that even if someone else subsequently amends the trade, it is possible to see who verified the escalation.

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#### 4.2.6. Process Name: Aggregate Business Limits – Ref 1.2.1.5

To monitor the total requirement used by a business line both gross and net during any selected period but mainly intra-day. Similar to the individual payment limit controlled by the Escalation check, the following process looks to track and identify businesses that are creating a large intraday (and possibly extended) liquidity drain.

During the day GCCM should track the total value of incoming and outgoing activity for a business line and then compare each new request from that business line versus the prior total. Once the net total exceeds the historical aggregate limit for a business, outgoing traffic should be held up either until incoming funds reduce the net number below the limit or CM approve an additional outgoing traffic.

At any one point in time GCCM should list the Business Lines that have traffic currently held up due to exceeding their predetermined limit in a queue accessible from main screens. If incoming funds or a preadvice notification arrives from the Business line while activity is pending, then the Business line should be automatically released and activity continue to be processed until the limit is again exceeded. Cash Management should also be able to enter the queue and authorise the release of traffic for the Business line either by allowing the CM user to update the current limit for the Business from the queue or by allowing the CM user to view the pending traffic and releasing the individual items from the queue. If the latter GCCM should confirm the effect releasing the items would have on the Business position.

For each Business aggregate levels should be automatically set by an overnight calculation process. In addition there will need to be a user interface will be required to input and maintain the table of aggregate escalation criteria by Business Account / Currency.

Note that for this section both the process and calculation suggested are a very simple way of achieving better control of the flow of activity for a particular business and it is likely that over time this checking process will need further revision and enhancements.

##### 4.2.6.1. Overnight Calculation

The following calculation is one option to set the aggregate escalation limits on GCCM.

*D&R should undertake the following calculation on a daily basis:*

- *Retrieve 6 months of requests (outgoing real world debit requests and incoming receipts); one month's minimum data required*
- *Calculate the average and standard deviation of the total net funding by Business Line from the individual Business Accounts owned by the Business*
- *The limit will then be a formula driven calculation:*
  - *Initially it is likely to be mean and 2 standard deviations (95% confidence interval) for the Business*

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GCCM should use the results of the calculation to overwrite the limits used the previous working day. It should also record and report where there has been a significant value change in the limits between the two working days as this may reflect a one-off transaction that does not reflect the activity through the Business Account and should be excluded from the calculation process. GCCM should then allow the appropriately authorised user to flag a historical movement so that it is excluded from the calculation process and rerun the calculation process for that particular Business.

#### **4.2.6.2. Authorisation**

Unlike other repairs which will be handled primarily by non-CM users it is expected that aggregate limit approvals will only be handled with Cash Management. However handled the Verify process should record the verifying user's UserId, so that even if someone else subsequently amends the trade, it is possible to see who verified the escalation.

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#### **4.2.7. Process Name: Compliance Checking – Ref 1.2.1.6**

To identify and report on items that are potentially out of policy payments that could in turn constitute a ‘duty of care’ failure somewhere with the Firm. There are two levels of checking one which will occur at the individual request level real time and one which will review all activity through the system and may not occur real-time.

These checks are not designed to be full-proof and do not look at the individual client accounts but at the Internal Business account level which will represent a business line not a client. Also the checks are likely to identify a number of false-positives, at least to begin with. Certain of these checks may be conducted elsewhere in the bank as well within GCCM D&R.

Messages sent into GCCM will be passed through the following checks to identify items for further study. Items that are identified may or may not be held back by the checks as certain checks may identify too many false positives initially for real time investigation. Therefore the system will need to be able to switch between just reporting items to also holding them back as the number of false positives is reduced.

GCCM should allow checks to be improved and further checks to be included after agreement between Compliance and CCM and suitable testing.

#### **Notes**

1. If an instruction is stopped CM will liaise with the appropriate CAD and / or Operations group for guidance.
2. If an instruction is not stopped CM should investigate the item next day.

Each night GCCM should create a report of all flagged items with the reason why for distribution to Compliance.

#### **4.2.7.1. Suggested Checks**

This list is not considered exhaustive – awaiting feedback from Kim Keating and Sherri Dewey specifically.

Update checks / maintaining rules is this user maintained, daily update from external list and user override.

##### **4.2.7.1.1. Checks on individual requests**

1. Payment or Receipt SSIs include a restricted country
2. Currency is restricted
3. Payment or Receipt SSIs make reference to certain institution types including casinos or money exchange bureaus
4. Travel Rule details are not completed
5. On incoming money for the quoted client account the ordering instructions are not the same as those held on file in GARM

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6. SSIs quoted in message are not the same as the ones in GARM for the quoted GARM id. It is expected that this check in particular is likely to create a large number of false positives as the Firm allows third party payments under certain circumstances, such as Letter of Authorisation in place or Authorised Third Party Repetitive Payments, so GARM / GCCM may need to be able to flag that this approval is in place.
7. Final beneficiary detail line only quotes an account number not a name

#### 4.2.7.1.2. Checks on multiple requests

More complex checks reviewing activity data for patterns:

1. Large volumes of small payments to same beneficiary account from different internal business accounts
2. Unusual activity based on historical pattern for an internal business account (multiple payments and receipts same day on a low volume business account)
3. Time series and value mix analysis

#### 4.2.7.2. Authorisation

The following steps outline how items that have failed the Compliance validation process should be authorised.

As per any fail not managed by CCM, the requests should be sent out to the relevant group for authorisation. However in this case the items should be treated as requiring Manual repair (See alter for more detail on process).

Items that fail should be reported to Compliance via an automated email. The email should then allow the receiver to bring up the system and go straight to the detail of the message and thence authorise it.

In addition Compliance should be able to email their authorisation to Cash Management who in turn can authorise the request in D&R on Compliance's behalf.

##### 4.2.7.2.1. False Positives

To reduce the continually validation of repetitive items that are found to be false positives (a request that fails a check but in fact is not an issue) D&R should allow users to flag a request in such a way that any subsequent matching requests would automatically pass the Compliance checks.

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#### **4.2.8. Euro In Currencies**

It is expected that the countries that formally joined the EU in May 2004 will adopt the Euro after a period of currency stability. Therefore it is prudent from the start to build into GCCM D&R the ability to merge currencies into the Euro.

In fact where possible the functionality required to merge currencies into a new or existing currency should be made as flexible as possible to allow for the creation of new pan regional currencies.

Currencies should be added to a table that defines them as a merged currency, the rate at which they should be converted and the currency into which they should be merged. For example XEU was merged into EUR at a rate of 1 for 1. The conversion rate should be user definable or up-loadable from an existing feed of FX rates into GCCM D&R.

Requests that come into the GCCM D&R in a currency that has become an in-currency should be converted into the correct amount for the overriding currency (Euros) using the rate provided before the booking is assigned to a nostro. The original currency amount should be retained for future use including the creation of the outgoing payment request or preadvice notification.



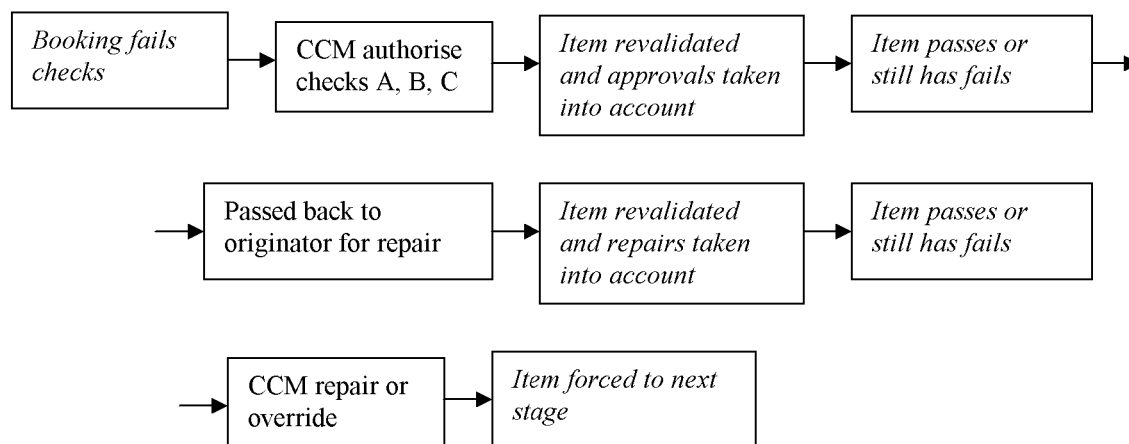
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#### 4.2.9. Process Name: STP Fails Repair Handling – Ref 1.2.2

To create a process where by items that fail one of the STP checks can be repaired within or outside of CCM. Note the authorisation of items that fail certain of STP checks will remain within CCM's control. These items have generally be noted in the individual documents

Items that fail an STP check will require approval or amendment. Approvals will be handled within Cash Management. Amendments should be handled by the originator of the request. If the originator cannot amend, CM will require an override ability to do so themselves and to either repair, force the request through or cancel.



This implies CM will require a screen where they can undertake both approvals and amendments. When an item is flagged as requiring multiple approvals by CM, CM should have the flexibility to approve one, some or all of the items open simultaneously.

Once a request has been approved (partially or complete) it should pass through checks again. If fully approved the item should pass these checks unless another one arises in the interim (say failed on escalation, but before approval time has moved on and funding deadline has passed, then the item should fail the Funding Deadline check). If only partially approved then items that have not been approved should again flag along with any new fail.

An external movement request that falls into repair should appear in the funding numbers as a pending number.

Amendments to static, etc. should be passed back to the originator of the request to effect the changes. To allow for the different capabilities of the source system, GCCM D&R will have two automatic processes for distributing the amendment request, which one of the processes is to be used should depend on the source system that generated the request rather than the internal Business Account that is involved in the movement. (The setting of the repair process will be part of the source system static set-up on D&R.)

To reflect the different processes by which messages are repaired, the failed items should be shown in different repair queues within the system. This will allow CCM to quickly identify items requiring their

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approval and ensure items are being repaired in a timely manner by the users directly or through the source systems. A suggest set-up would be

- Items requiring CCM approval
  - Sub-divided by currency and error
- Items requiring Compliance approval
  - Sub-divided by currency
- Items requiring manual repair
  - Sub-divided by currency and error
- Items sent for repair
  - Sub-divided by currency and source system

Note that it may be possible for an item to appear in three queues simultaneously; as item requiring CCM and Compliance approval could also require repair but at this point it is not expected that items will be sent both for manual repair and back to the originating system.

However as implied above a user should still be able to access a message sent back to the originating system and update the request within D&R so that it passes the STP engine.

#### **4.2.9.1. Option 1 Web Access to Amendments**

Items for repair are automatically emailed to the user group responsible for the Business Account quoted on the request. The email would contain a link back to the Business account. The link would open to either:

- The standard view for the business account (to be detailed later but essentially designed to look like a summary statement with drill down to the detail) in which users could recall a request by number, by drilling down on the appropriate item or recalling items awaiting amendment or approval of an amendment.
- Or a special screen showing all items awaiting amendment or approval of an amendment in order.

The users would then be able to edit the relevant 'breaking' details only and save the amendment for approval or Cancel the request.

The number of approvals required for an amendment will be as defined in the Business Account static.

#### **4.2.9.2. Option 2 Feed back to source systems**

Items for repair are sent back to the GCCM Gateway that then returns them to the appropriate originating source system. The source system reads the return, updates its own records and flags the return to its users. Once the users complete the necessary amendment and it is approved as per the source systems own internal logic. The amended instruction is returned to the GCCM Gateway for reprocessing.

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The Gateway will then pass to the updated request the Payment Import module. This will need to recognise that the item is not a duplicate but an amendment to an earlier transaction. Once it does so it should update the appropriate record in GCCM, increasing the version number and status as a result.

Regardless of the method used to repair an item, the request should again be passed back through the STP engine to ensure the repair addresses the highlighted issue(s).

If an item fails for a second time, then it should go to the Cash Mgmt exception queue for them to review.

Items that remain awaiting approval or amendment beyond their value date should be cancelled. Back-valued items awaiting repair should be cancelled at the end of the processing day on the day they were submitted or end of the value date they have been funded for, which ever is later.

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#### **4.3. D&R: Detail of External Message Generation Validation (STP Engine) – Ref 1.3**

##### **4.3.1. Process Name: Identify Real World Nostro – Ref 1.3.1.1**

To identify real world account that should be used to settle requested transaction. A request that has come into GCCM that is identified as an external item and so needs to be paid from and / or received into a real world Lehman nostro.

The intention here is determine which nostro account is most appropriate under any given combination of internal Business Account, legal entity, regulations and Treasury funding availability. Once the nostro account is identified the funding request should move from Pending Assignment of External Account to Pending Settlement in the appropriate nostro account.

The choice of nostro account through which to pay an item is complicated by the variety of regulations and individual business requirements that the Firm currently supports. The process described below is an attempt to work around the current set-up to minimise the initial disruption to the current operating environment while allowing traffic to be consolidated and a simpler process emerge over time.

The basic premise is that if a request sent to GCCM quotes a Business Account number that is directly linked to external account as the account to be debited / credited by a request then the nostro account should be used as the default by the business and GCCM acts as a wash through. If an external account does not exist then the request is processed through the entity nominated as the Funding entity for the legal entity in which the Business Account resides in and intercompany journals are created to show movement on behalf of the originating entity.

It is also possible that traffic for a business may have to settle for whatever reason through a nostro account in a particular entity (as a result of historical set-up) and for this reason there exists the concept of Paying Agent that could be different from the Funding Agent. This scenario will be used if:

- LBI retains a USD nostro account to settle its own activity, funded by LBHI, yet pass certain currencies through a general nostro account.
- To manage the migration of LBSFI non-USD activity which settles through LBI's nostro accounts yet is funded by LBHI UK Branch's nostro accounts.
- The Treasury entities themselves where they act as Paying Agent for each other. For example the USD funding relationship is one of roll-up from LBAH to LBHI UK Branch to LBHI.

Finally to overcome issues such as Euro-In Currency process or cross-currency funding, GCCM will need to be able to convert traffic between currencies and pay them through the appropriate real-world account. In these cases the external nostro should be chosen based on the currency of the final payment: this will be quoted for individual items but may be automatically derived for more generic items such as Euro-In currencies and so noted on the request by GCCM.

Once the nostro account is identified the funding request should move from Pending Assignment of External Account to Pending Settlement in the appropriate nostro account.

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The process described below is assumed to work automatically but it should remain possible for a Cash Mgmt user to override the defined external account used for settlement should the occasion arise (for example money market deals from TWS including Balance Swaps). Other overrides will also need to be accommodated. These include:

- The intraday release function which may override the external nostro to be used to continue the routing of payment activity should the default nostro account 'max' out.
- The choice of Payment Channel
- Invocation of a back-up nostro account.

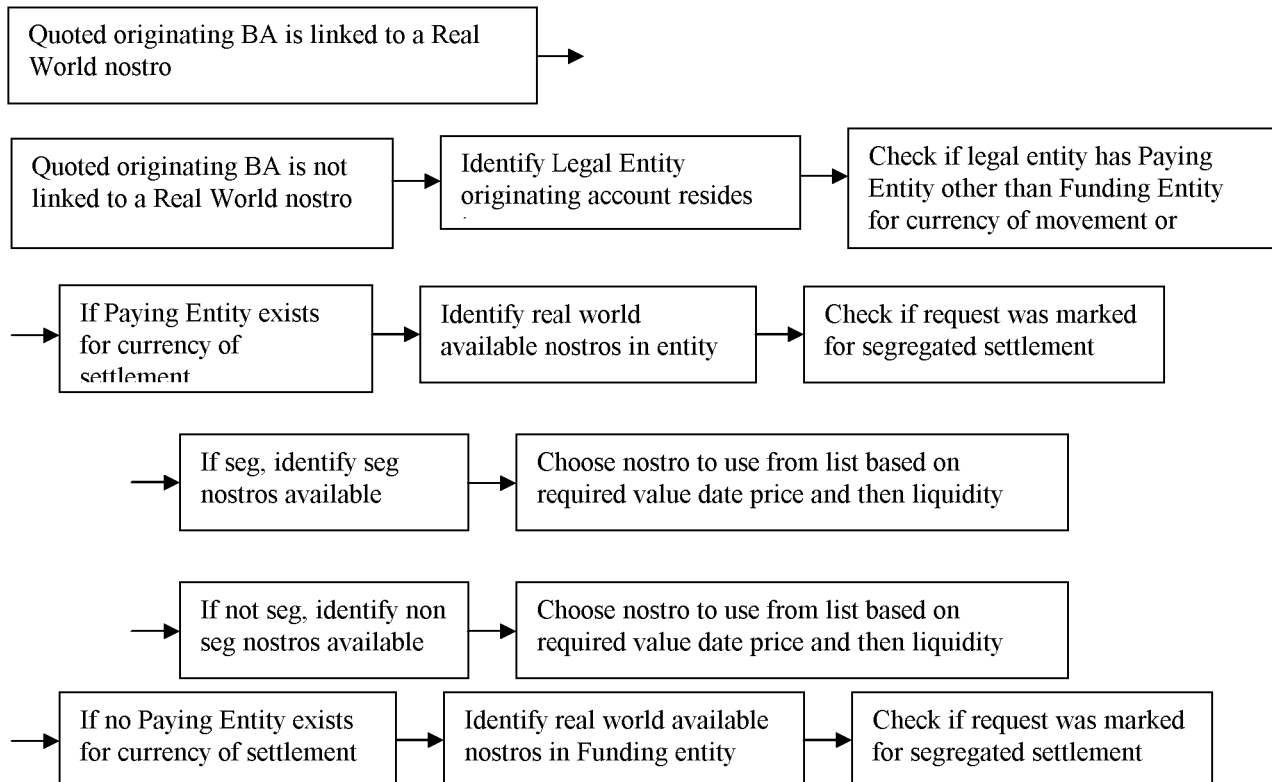
#### Notes

1) If the choice of Payment Channel or invocation of back-up nostro account occurs then nostro positions and accounting should reflect this (though in both cases the accounting to the Business Account should pass through the designated Funding Entity for that Business account and any additional intercompany journal / position should be created between the Funding Entity and the owner of the external account used.)

2) An amendment of external nostro should occur before accounting is generated as the generation of accounting is assumed to occur after settlement.

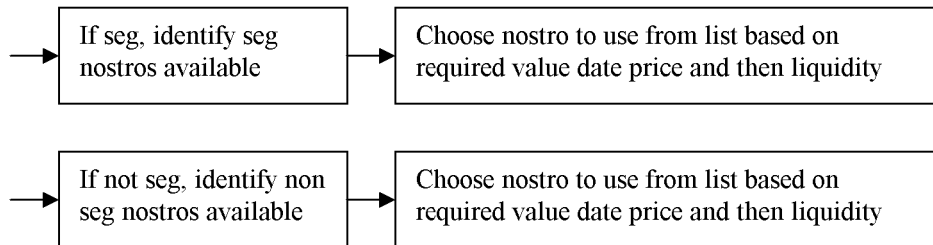
#### 4.3.1.1. How process could work:

The following steps indicate how the nostro account would be chosen. This is explained in more detail below.



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4.3.1.1.1. If the external account exists:

If the Business or Originating Account quoted on the instruction is defined as linked to a Real World / External nostro in the account static, then GCCM should route the external message (e.g. Swift) through this Real World account. GCCM will still produce accounting through this may wash through the entity (i.e. net to zero).

This simplification may cause an issue in Europe and Asia where Ops use the same ITS nostro for free cash and DVP activity and accounts classed as Real World Depots or Margin accounts should not be used for free cash activity only funding movements. In particular these external accounts usually suffer from higher payment and interest fees for non-DVP settlement.

To get around this issue Ops can either:

- Be provided with two internal Business accounts (one for the free activity that is purely internal and one that represents the external) that they reconcile the trade bookings against and should quote the appropriate details on the request.
- Or GCCM is allowed to override the external account by using the Funding / Paying Entity for all activity not flagged as FUND where the external nostro account type is not a Nostro.

4.3.1.1.2. If the Business Account only has a Funding Entity for the currency of the movement:

If the Business or Originating Account quoted on the instruction is defined as an Internal Business account in the account static (and the Business account is not linked to an external nostro), then GCCM should route the external message (e.g. Swift) through to the appropriate the Funding Entity.

In the Funding Entity the nominated external account should be used.

It is possible that the Funding Entity may also not have a real world account in the specified currency in which case GCCM should pass the instruction on to the Funding/ Paying entity flagged in its records for settlement.

Accounting should involve journals to the Business account, Real World Nostro and intercompany accounts.

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4.3.1.1.3. If the Business Account only has a Funding Entity for the currency of the movement but the Business Account is marked as a segregated cash account:

If the Business or Originating Account quoted on the instruction is defined as an Internal Business account in the account static, then GCCM should route the external message (e.g. Swift) through to the appropriate Funding Entity marking the request as a segregated one.

In the Funding Entity the nominated external account for segregated activity should be used. If no segregated account exists the nominated default external account should be used.

It is possible that the Funding Entity may also not have a real world account in the specified currency in which case GCCM should pass the instruction on to the Funding/ Paying entity flagged in its records for settlement.

Accounting should involve journals to the Business account, Real World Nostro and intercompany accounts.

4.3.1.1.4. If the Business Account has a Paying Entity for the currency of the movement:

If the Business or Originating Account quoted on the instruction is defined as an internal Business account in the account static and a Paying Entity is nominated, then GCCM should route the external message (e.g. Swift) through to the appropriate Paying Entity.

In the Paying Entity the nominated external account should be used.

It is possible that the Paying Entity may also not have a real world account in the specified currency in which case GCCM should pass the instruction on to the Funding / Paying entity flagged in its records for settlement.

Accounting should involve journals to the Business account, Real World Nostro and intercompany accounts; though for the Business Account the accounting should first pass through the designated Funding Entity for that account and an additional intercompany journal / position should be created between the Funding Entity and the Paying Entity.

This two step accounting process may seem overkill but is designed to address the process for funding and settlement of the traffic until the process itself is simplified and as a result allows the regulated entities to minimise the number of intercompany positions created by the use of a Paying Entity.

4.3.1.1.5. If the Business Account has a Paying Entity for the currency of the movement but the Business Account is marked as a segregated cash account:

If the Business or Originating Account quoted on the instruction is defined as an internal Business account in the account static and a Paying Entity is nominated, then GCCM should route the external message (e.g. Swift) through to the appropriate Paying Entity.

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In the Paying Entity the nominated external account for segregated activity should be used. If no segregated account exists the nominated default external account should be used.

It is possible that the Paying Entity may also not have a real world account in the specified currency in which case GCCM should pass the instruction on to the Funding / Paying entity flagged in its records for settlement.

Accounting should involve journals to the Business account, Real World Nostro and intercompany accounts; though for the Business Account the accounting should first pass through the designated Funding Entity for that account and an additional intercompany journal / position should be created between the Funding Entity and the Paying Entity.

4.3.1.1.6. If the Business Account is set-up not for the currency of settlement

If the Business or Originating Account quoted on the instruction is defined as being set-up for a different currency from the currency on then the individual request then the external account should be identified by looking for the appropriate currency account for the Funding Entity linked to the Business Account.

In this case additional cross-currency accounting will need to take place.

4.3.1.1.7. Example of Paying Entity

*Post GCCM implementation LBI USD traffic is required to pass through LBI's USD account. For an instruction sent from MTS to GCCM, MTS quotes the internal Business Account to debit. GCCM goes to generate payment for settlement and identifies legal entity from internal Business Account static.*

*This legal entity static identifies LBHI as Funding Entity and LBI as Paying Entity. Latter overrides former, so GCCM then checks tables 5.1.3.1.2 Paying Entity table and 5.1.3.1.3 External Nostro numbers to identify the account to be used for the cash movement – CCY is included for speedier checking, if the currency of the payment doesn't exist in list request flips back to Treasury Funding Entity. Accounting credit is passed to appropriate account.*

*Now the above movement needs to be funded so the external nostro account needs to receive funds from LBHI and intercompany record created. Above process would necessarily create the correct result. So how is this driven? From the account drawing down via a funding 'special' process (FUND) against the main account of the Funding Entity.*

4.3.1.1.8. Multiple External Nostros in the Funding or Paying Entity

has more than one external nostro account in currency of the request.



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#### **4.3.2. Process Name: Determine Payment Channel – Ref 1.3.1.2**

This section outlines how to identify the optimally settlement method for a particular external cash transfer and generate appropriate message, such as Swift. The intention is to determine what payment channel should be used by GCCM externally to efficiently and cost effectively settle the request.

The choice of how to pay an item is complicated by the variety of options that the Firm currently supports and in theory has available to it. The process described below is an attempt to work around the current set-up to minimise the initial disruption to the current operating environment while allowing traffic to be consolidated and a more cost effective process emerge over time.

The basic premise is that the default payment channel for an existing external account has already been defined and this should be utilised until additional channels are added, at which point a default will nominated, though GCCM should use the least cost method available for a given value date, urgency and amount combination.

The process described below is assumed to work automatically but it should remain possible for a Cash Mgmt user to override the defined channel used for settlement should the occasion arise. Other overrides will also need to be accommodated. These include:

- The intraday release function which may override the channel to be used to continue the routing of payment activity should the default 'max' out.
- Invocation of a back-up account.

It is though expected that the majority of accounts will have only one option.

If after the choice of payment channel has been identified change of external account occurs, the funding balance for both accounts should be updated appropriately (out of one and into the other). This should not effect the overall funding for the Firm though it may affect a specific entities funding.

Note

1) If the choice of Payment Channel or invocation of back-up account occurs then nostro positions and accounting should reflect this (though in both cases the accounting to the Business Account should pass through the designated Funding Entity for that account and any additional intercompany journal / position should be created between the Funding Entity and the owner of the external account used.)

2) An amendment of a channel should occur before accounting is generated as the generation of accounting is assumed to occur after settlement.

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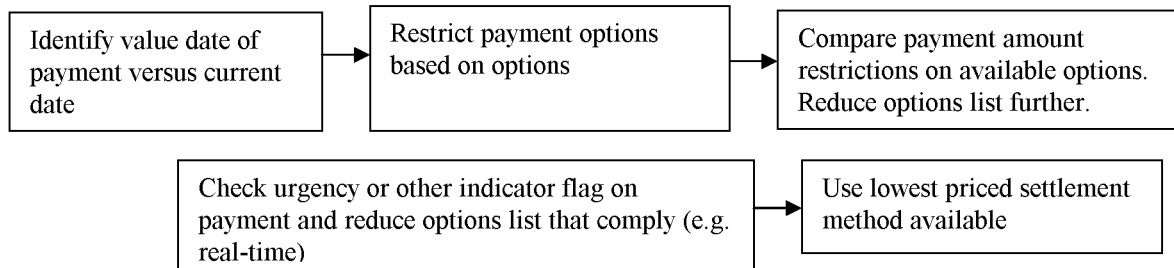
#### 4.3.2.1. How process could work:

The following steps indicate how the channel would be chosen. This is explained in more detail below.

##### Payments Only

Only one option exists

##### Otherwise



##### Receipts

Notify Agent bank by lowest priced method for receipts

#### 4.3.2.1.1. Example of Payment Channel Rule Set for USDs

This is represented by the following matrix of choices for USD traffic:

Payment Channel	Restrictions	Value Date difference	Amount	Urgent Request	Price
ACH		X	Less than Y	No	A
Agent bank via SWIFT		0	Unlimited	Normal / Urgent (within 1 hour)	B1
Agent bank via CPU		0	Unlimited	Normal / Urgent / Immediate (within 30 minutes)	B2
LB Bank FED WIRE		0	Less than Z	No	C

Where:

- Value Date difference is number of days between required value date and current date
- Urgent request is worst case time to process once released from GCCM; for example message authorised for release after agent payment cut-off should probably go via CPU to ensure released externally from Agent
- B1 and B2 will probably be similar Agent costs but fully loaded costs including infrastructure / messaging costs may create difference
- C would be lower than B's but potentially more than A

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4.3.2.1.2. If there is only one external channel:

If for the chosen external Nostro only one option exists, then GCCM should route the external message through this option (e.g. Swift).

4.3.2.1.3. If more than one option exists:

If for the chosen external Nostro more than one option exists, then GCCM should route the external message through the option that is most cost effective for the Firm given the information available on the instruction. (Note the Intraday Release function will be allowed to override the choice of payment channel should it / a Cash Mgmt User believe that rerouting a request improves the Firm's intraday liquidity.)

GCCM should go through the following checks, though the default for a nostro should always be used if there is any doubt:

- For the value date requested what options are available?
- For the amount what options remain available?
- For the urgency flags set on the message what options remain available?
- For the remaining options use the one with the lowest Price band.

Note a further check might be applicable for receipts as some channels do not accept Preadvice notifications.

Once the channel has been determined the message should be constructed to pass straight through the channel (see section on Message Generation and Outgoing Traffic Formatting in term) and passed to the Intraday Release function.

Items that are destined for batch release should be written to the appropriate file. The sending / release of any batch file will be contained within the Intraday Release function.

It may be possible for the Firm to leverage its bank licenses by having both Lehman Brothers Bank and Bankhaus act as cash settlement agents for activity generated elsewhere in the bank. In these cases the channel will be flagged as Internal Option.

Items so flagged should then be moved to the external nostro for the entity flagged as owning the selected Internal Option. Once in that account the external messages should be generated as appropriate for that account.

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#### **4.3.3. Process Name: Message Generator – Ref 1.3.1.2**

This section outlines the message that can be generated, e.g. a Swift message, to request the settlement of action an external movement. The message will be formatted in accordance with the formatting laid out in the next section, Outgoing Traffic Formats.

This definition outlines the five basic messages to be created by GCCM:

1. Bank to Bank Payment
2. Customer Payment
3. Receipt
4. Cancellation
5. Amendment

Combinations of the messages maybe created, for example:

- Cover method payments would require Bank to Bank and Customer Payment messages
- Nostro funding would require Bank to Bank and Receipt messages.
- Back-valued payment would require a payment with current value and an amendment message

Once generated, the messages should go to the Intra-day release function for release with their status on the reporting screens updated.

External messages should be generated a set number of days in prior to value and not before; for example for a payment received on 1<sup>st</sup> value 14<sup>th</sup> for USD the external message does not need to be created on first but say on 13<sup>th</sup>. The period forward of value that messages should be generated should be set as part of the currency / external nostro account static

#### **4.3.3.1. Payments**

GCCM should create a payment message whenever the amount booked or advised by Operations is a debit in cash flow terms. The exact message created will be determined by the chosen Payment Channel.

Note payments cannot be sent through most channels back valued, therefore GCCM will need:

- to automatically generate the payment message with the date the item has been funded for
- and an amendment request to have the item processed with good value and the beneficiary made whole for the value date difference.

##### **4.3.3.1.1. For SWIFT**

The payment will either be to another financial institution or a non-financial institution customer.

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- Payments to a financial institution should be by MT202. Financial Institutions will generally either have a BIC code or a Fed Wire number, though exceptions exist.
- Payments to a non-financial institution should be by MT103.

The request flag should be set when the message is sent to GCCM but the simple split above can be used to determine the appropriate message type.

In addition a third option should be available to the source systems and for CM use if editing a payment request and this is a Cover payment. Cover payments involve a combination of MT202 and MT103 being sent.

- The MT202 is sent to the Account With Bank on the details supplied quoting this bank as the beneficiary on the 202.
- The MT103 is sent direct to the Account With Bank indicating they should have received funds from Lehman's correspondent bank and that they should be applied to the original beneficiary.

#### 4.3.3.1.2. For Batch / Clearing House items

Payments that will be settled as part of batch file sent to a bank for processing should be written to the file.

Batch systems do not generally differentiate between payments to a financial or non-financial institution but do require account numbers to be quoted in the beneficiary's details rather than a BIC code.

#### 4.3.3.2. Receipt

Certain currency markets / agents do not count Preadvices of incoming funds as confirmation that funds will be credited to a nostro account (and the Agent does not count towards either the account intraday balance or towards their own funding).

However GCCM should create the messages for all currencies in the appropriate format for the payment channel chosen for the notification as certain institutions, in particular Euroclear, make use of them even if the market standard for a currency is not to count them (e.g. GBP & USD into Euroclear).

The release of these messages will be controlled within the Intraday Release function.

#### 4.3.3.2.1. For Swift

MT210s should be created using all available information.

Note at the nostro account level D&R should allow users to restrict the sending of MT210s externally (though D&R should accept MT210s for all Internal Business accounts) if they will not be used by Agent.

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#### **4.3.3.3. Cancel**

When an item has been cancelled but has been released to the Agent bank for processing, a cancellation message will need to be sent.

GCCM should generate the appropriate message where it can (initially may only have Swift cancellations MTn92 messages) and place it in a queue for release by CM. The sending of the cancellation message should be noted on the D&R record of the request (this info should be passed to GSSR).

#### **4.3.3.4. Amend**

When an item has been amended but has been released to the Agent bank for processing or back value requested, an amendment message will need to be generated automatically.

GCCM should generate the appropriate message where it can (initially may only have Swift amendments MTn9? messages) and place it in a queue for release by CM. The sending of the amendment message should be noted on the trade (this info should be passed to GSSR).

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#### 4.3.4. Process Name: Outgoing traffic formatting – Ref 1.3.1.4

Each payment channel available to GCCM will have its own specific formatting requirements and this section outlines some basic rules. Further work will be required to analyse each channel as it is set-up, in particular any local specific requirements such as Swift Zengi, kanji or other non-roman alphabet characters in local interfaces will need to be catered for.

Note in addition many Agent banks impose their own specific STP requirements on top of the basic ones and in time GCCM will need to be able to cater for these specifics.

Original currency amounts should be quoted on the message if the request had been for example in a Euro-currency. Items directly in Euros do not need to append Euro currency original amounts.

The following rules are based on Swift's suggested formatting of its messages for STP purposes. Similar rule sets will need to be created for ACH and other payment channels. Note these rules sets should not be mandatory for every payment channel (as it would not always make sense).

##### 4.3.4.1. Payment Channel - Swift

###### 4.3.4.1.1. Rule 1

Any field in the 50 range used in the MT202 should have an 8 or 11 character BIC in the field.

###### 4.3.4.1.1.1. Exceptions to Rule 1

For STP purposes a BIC is not always required in fields 56 or 57 provided a clearing code for the institution is quoted. If a clearing code is used i.e. a CHAPS sort code or Fed Wire reference, the code should be in the text field in GCCM suffix will be D and the format of the message will be styled as follows dependent on the clearing system used:

57D: //SC309287  
Lloyds Bank  
Fenchurch Street Branch

Each clearing code is shown with a two-letter prefix followed by a set number of digits.<sup>5</sup>

###### 4.3.4.1.2. Rule 2

If the ultimate beneficiary is a financial institution with a BIC code the message type should always be a MT202. A BIC address should never be quoted in field 59 of a MT103, if it is the message should be a MT202

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<sup>5</sup> A list of the codes and number of digits used in clearing codes can be found in the SWIFT user guides.

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4.3.4.1.3. Rule 3

Free format text information for the beneficiary should generally be detailed in field 70 of an MT103 and field 72 of a MT202. Occasionally both fields are used on an MT103.

4.3.4.1.3.1. Rule 3 Sub-rule 1

Limited predefined code words are allowed in field 72, if these are not quoted a generic choice, such as BEN should be added.

4.3.4.1.3.2. Rule 3 Sub-rule2

There is no restriction in field 70 however it is better to add no extraneous data to any message.



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#### 4.3.5. Process Name: Intraday Release – Ref 1.3.1.5

This process will control the release of traffic through a particular nostro account or even currency to maximise the 'flow' through the Firm at the lowest cost by making use of free intraday credit lines in preference to charged or secured intraday credit lines. The process will be semi-automated with certain items potential going straight out, others held and released in individual or in batch, or released in an automatic phased approach. Once released the items should be passed to the Gateway for processing via the appropriate channel.

All items should be sent to a pending release queue by currency. Items for batch file processing should be written to separate queues to those that are to be processed individually. Every queue should be monitored via a screen (s) showing queues and number of pending items per queue. The screen should have a drill down facility through to show the pending items in a particular queue.

The system should allow messages to be released up to a debit cap / intraday limit for the nostro account. Note debit cap / intraday limit will be treated as synonymous for the development of GCCM D&R, though the debit cap implies a harder limit than intraday limit. The debit cap / intraday limit should be set per nostro account as part of its static set-up.

The intraday balance should be tracked through the day and compared with the debit cap. The release of any messages that would take the balance beyond the debit cap should be halted until funds have been received into the nostro account reducing the debit balance. Cash Management will retain the ability to override the debit cap restriction and manually release items. GCCM D&R should be able to report any exceeding of the debit cap so that any costs implications of the excessive overdraft position can be properly allocated back to a business line.

For items that have been released and create a requirement above the debit cap, CCM users should have the ability to impose a penalty charge on the request to offset any cost implications. This charge should use the same methodology as the charging imposed for funding a movement after the funding cut-off for the currency of the request.

Until the system has an external feed giving real time balance information<sup>6</sup> (or for nostro accounts where this is not available), the intraday balance should in general be calculated as:

- Real World Start of Day balance
- Less any released payments that have been confirmed
- Plus any confirmed receipts
- Less any released payments that have not been confirmed

Though the system will need to allow for differences Agent bank methodologies. Unconfirmed receipts should not be included for intraday balance reporting.

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<sup>6</sup> CCM have investigated various options for real time balance information but have not yet made a decision on which approach is the most cost effective for the requirements.

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Within the set-up for each queue it should be possible to flag which intraday process should be followed. The options that have been defined are completely manual, semi-automatic release or completely automatic release. Each option is outlined in more detail below.

#### **4.3.5.1. Manual Release**

Once in a manual release queue a user should be able to highlight a single or multiple items and either:

- Authorise them for release
- Request items are netted – see section on netting for further details
- Request an item is split – see section on netting for further details
- Request items are Unnetted (net reversed) – see section on netting for further details
- Cancel the outgoing message in case of errors
  - Should the cancellation of an outgoing message require separate authorisation?
- Delete the outgoing message
  - Not through message should be deleted the accounting should still occur.
- Amend the real-world account to send the message out of (this should cause the message to be regenerated)
- Reroute the payment changing the Payment Channel (this should cause the message to be regenerated)

At the point a request is authorised for release the payment should be compared to the intraday limit / debit cap number and the current nostro account balance. Where sending the payment would cause the limit to be breached the system should indicate this to the user and give them the option to not release the payment at that point. Messages that are not released should be put back into a pending release status.

Note for the current nostro account balance the system should make use of any real-time feed of account balance data first and if this is not available then its current projected intraday balance based on confirmed and released activity.

Note only likely to be payments that are moved between real world nostro or payment channels but should allow Preadvices to be affected as well in case clients have paid incorrect instructions.

#### **4.3.5.2. Semi-Auto release process**

Items should be listed in priority order using similar set of ordering criteria as above:

1. Urgent flagged items
2. Incoming notifications
3. Outgoing payments under preset amount (definable by queue)
4. Remaining outgoing payments

And should be grouped within a priority by the internal Business Account and Beneficiary of the payment.

A CM user should be able to highlight a single or multiple items and either:

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- Authorise them for release
- Request items are netted – see section on netting for further details
- Request an item is split – see section on netting for further details
- Request items are Unnetted (net reversed) – see section on netting for further details
- Cancel the outgoing message in case of errors
  - Should the cancellation of an outgoing message require separate authorisation?
- Delete the outgoing message
  - Not through message should be deleted the accounting should still occur.
- Amend the real-world nostro account to send the payment out of (this should cause the message to be regenerated)
- Reroute the payment changing the Payment Channel (this should cause the message to be regenerated)

Note only likely to be payments that are moved between real world nostro or payment channels but should allow Preadvices to be affected as well in case clients have paid incorrect instructions.

At a certain point in the day (for example within an hour of payment cut-off for the real world nostro) or when the queue length reaches a certain size the system should then be allowed to process the release of certain traffic automatically.

Items should only be auto-released if they meet strict criteria and should be action in line with priority ordering / listing of the requests. The following are some suggestions:

- Amount out under USD1mm equivalent
- Amount in under USD10mm equivalent
- Beneficiary account is not a Lehman nostro or Internal Business account

Items should continue being processed either after auto release or manual release until the balance reaches the debit cap. At this point payment should be held back (Preadvices can continue to go out) until the balance on the nostro account reduces (this will happen as incoming funds are credited to the nostro account at the bank).

As individual queue lengths build up it is likely that CM Users will need to go in and release items through to the bank that would cause the debit cap to be exceeded. This should be allowed. In addition if there are pending payments still in the queue within an hour of the payment cut-off, it should be possible for the system to override the debt cap control and continue sending items itself to prevent fails.

#### **4.3.5.3. Auto release process**

All items in an auto-release queue should be prioritised in the following order

1. Urgent flagged items
2. Incoming notifications / Preadvices
3. Outgoing payments under preset amount (definable by queue)
4. Remaining outgoing payments

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Within each of these prioritises, items should be released externally using the First In First Out (FIFO) principles.

Items should continue being processed until the balance reaches the debit cap. At this point payment should be help back (Preadvices can continue to go out) until the balance on the nostro account reduces (this will happen as incoming funds are credited to the nostro account at the bank).

As individual queue lengths build up it is likely that CM Users will need to go in and release items through to the bank that would cause the debit cap to be exceeded. This should be allowed. In addition if there are pending payments still in the queue within an hour of the payment cut-off, it should be possible for the system to override the debt cap control and continue sending items itself to prevent fails.

#### **4.3.5.4. Batch Files**

The files that have been created for batch processing payment channels should appear in their own queues by currency and agent bank. The summary screen should show number of files and number of items within the files.

A user should be able to drill down into a queue and be shown the individual files including information of channel and number of items in the file, value date of items in the file.

User should be able to release a file by selecting from the list and authorising it to go.

#### **4.3.5.5. Notes on Release methods**

1) There should also be a simple way to hold all traffic for certain nostro accounts / currencies overriding the default for the effected nostro accounts to allow particular payments to be prioritised or awaiting incoming funds before activity is released. It should also be easy to change back so that once the particular items have been paid or received normal processing can resume.

2) As well as the basic release queue per nostro account, the system should allow sub-queues for priority, value and / or legal entity making the payments. Therefore it should be easy to set and configure existing and new queues.

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#### **4.3.6. Message Acknowledgement**

It is expected that for each individual message or batch file sent from D&R will be acknowledged by the Payment Channel it is sent to, for example MINT should confirm back that it has received messages from D&R and been able to 'take in'.

Where the connection to the Payment Channel is not direct (e.g. via MINT for SWIFT) it is likely that the bridging system will also send back statuses indicating that it is successfully processing the item and has released the request or file through to the chosen Payment Channel connection. It turn the Payment Channel will confirm its acceptance or rejection of the message or file.

Any such acknowledgements should be received into D&R updating the statuses of the items in the release queues. It should be possible to filter the queues to identify items yet to be released, released not acknowledged, etc., so for example SWIFT will ACK messages that it can successfully process.

Note for batch file based Payment Channels, the channel may confirm back acceptance or otherwise of the overall file and then of the individual requests in the file. D&R should be able to take in and report both levels of acceptance.

These final status messages for each individual message should be passed back to originating systems to show that each message has been successfully sent from D&R.

##### **4.3.6.1. Failed messages**

As is noted above while messages can be accepted by the Payment Channel they may also be rejected or fail during processing. Depending on the point of failure, GCCM D&R should be able to allow users to amend the message and resubmit. At other points of failure it may be easier to repair in the bridging system, though this will reduces the envisaged benefit that D&R will contain a copy of the final message sent out for each request submitted to it.

For messages that are not accepted by the bridging system or Payment Channel, D&R should allow CCM users to access the message, amend the incorrect details and submit the request for approval at which case the external message should be regenerated – with a new unique id – and sent to the appropriate release queue again.

For messages that are accepted by the bridging system (or Payment Channel) but fail a check within the system (or Payment Channel), depending on the system and its processing capabilities, CCM users may have to access the bridging system and repair the message in the system.

However if the system allows for amend messages to be submitted to after reporting a fail, D&R should allow CCM users to access the message, amend the incorrect details and submit the request for approval at which case the external message should be regenerated – with the original unique id – and sent to the appropriate release queue again.

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#### 4.3.7. Process Name: Netting – Ref 1.3.1.6

As mentioned in the Intra-Day Release process, allow flows to be netted or bulked together to minimise the number of individual cash flows, identify opportunities where netting could have taken place though items were paid gross and allow flows to be split down into multiple flows to allow large amounts to be paid without creating intraday liquidity positions.

By netting, one single payment could be made from multiple numbers of payment and/or receipt transactions, thereby reducing costs.

External transactions could be netted only if they meet the following criteria:

- Same currency
- Same agent bank
- Same external bank account number
- Same counterparty/customer<sup>7</sup>
- Same payment channel
- Same value date
- Same legal entity

Internal transactions could be netted for the same counterparty/customer across legal entities. GCCM needs to validate and when the legal entities are different, provide facility for user to select a SSI to use as additional criteria. User would then confirm by hitting 'APPLY' or 'CONFIRM'.

If an during the process of netting instructions, the users selects part an internal transfer where GCCM D&R is responsible for generating the payment and receipt messages and these requests have been linked in advance (for example the cash funding of an external account from a main account), GCCM D&R should inform the user of the linked request.

The user should then be able to request the system to net up any associated linked items automatically to ensure the expected activity through the first nostro account matches that through the other nostro account. So for example a series of pays from one nostro account, linked to a series of receipts elsewhere, could be netted and the receipts would be netted automatically.

The amount of the netted transaction will be the sum of the amounts of the individual messages, allowing for the direction of the individual flows (i.e. payments are negative and preadvices are positive). If there were two payments, the combined would still be a payment of a larger amount. If there were a payment and a receipt, the resultant is either a payment or a receipt.

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<sup>7</sup> Currently CM matches across customer but only for internal flows, i.e. LBCC, LBHI and LBI. Hence need to be able to select SSIs to be used if multiple customers selected

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#### 4.3.7.1. Manual Process

It is expected that users will select the trades from the Intraday Release queues, highlighting the items to be included and the selecting the netting option. The highlighted flows would then become available in the netting screen.

Alternatively user will enter the netting screen and be able to search for a particular counterparty/customer number, nostro account number or counterparty/customer name. It should be possible to narrow this search further by currency. GCCM will return a list of transactions for the specific counterparty / nostro account.

Payments							
Ref Id	Message Type	Bank	Bank Account	debit/credit	Amount	Currency	Value Date
001A	MT202	Chase		12334 debit	-100000	USD	July 21, 2004
Receipts							
Ref Id	Message Type	Bank	Bank Account	debit/credit	Amount	Currency	Value Date
033B	MT210	Chase		12334 credit	74000	USD	July 21, 2004

User will highlight or check those items to be netted. GCCM will validate on specific fields, see Rules below. Once these validations are passed, then GCCM will assign a Net id to the individual items as well as to the newly created netted message.

The status of the individual items should be changed to "NETTED".

The resultant new message will be sent back to the queue for release with the appropriate priority. Note that to ensure the process is properly controlled, especially as the system may allow cross netting, the process of netting and splitting should require two separate users (or four eyes). Specifically CM User 1 would net / split messages and then a second distinct CM User would have to release the resultant message(s). In fact net / split items should be ineligible for auto release to ensure second touch always happens.

If a source system sends a request to amend or cancel a request that has been bulked, the bulked messages should fall into repair if it has not been released. If it has been released then the amend / cancel should be flagged to CCM for human intervention.

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Netting		User highlights those items to net. GCCM will log a net_id to the resultant combined message as well as the individual items. GCCM will change Status to 'Netted'							
Payments									
Ref Id	Message Type	Bank	Bank Account	debit/credit	Amount	Currency	Value Date	Net ID	Published External Status
001A	MT202	Chase		12334 debit	-100000	USD	July 21, 2004	N001	Netted
Receipts									
Ref Id	Message Type	Bank	Bank Account	debit/credit	Amount	Currency	Value Date	Net ID	Published External Status
033B	MT210	Chase		12334 credit	74000	USD	July 21, 2004	N001	Netted
Resultant net message									
		<div> <div>If the credit amount is greater than the debit amount, the resultant message type will be MT210</div> <div>If this is positive, message type is MT210</div> </div>							
MT202	Chase			12334 debit	-26000	USD	July 21, 2004	N001	

#### 4.3.7.1.1. Rules for Netting

- For those items that users have selected to net, GCCM has to validate that the following fields are the same before netting could take place:
  - Value date
  - Currency
  - Counterparty/customer
  - Payment Channel
  - Agent bank
  - Bank account number
  - Legal entity
- Netted messages should create final messages as per the following table:

Message Types	Payment or Receipts	GCCM/ User Option	Resultant payment should be
All 103s	Payments (Non-financial institutions)		103
All 202s	Payments (Financial Institutions)		202
All 210s	Receipts		210
103s and 202s	Payments (Non-Financial and Financials)	Default of 103 Provide Option for User to select	Default 103; override by user option
103s and 210s	Payments > Receipts		103
	Receipts > Payments		210
202s and 210s	Payments > Receipts		202
	Receipts > Payments		210



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- Where the payment instructions for the selected messages are not the same, the list of options should be flagged to the user and they should be request to append the correct / appropriate details
- Field 70 & 72 should be merged and details of gross flows that created the net should also be appended to the additional field.
- Exception to the above fields being the same is for internal transactions where the same counterparty/customer exists across multiple companies. In this situation, provide user the option to select ABA#, Name of Bank, Account number or Name on account. Once done, this additional condition would have to be the same along with the above specified fields to satisfy all criteria for netting.
- Where the urgency settings for the selected messages are not the same, the highest should apply for the netted item.
- Once the transactions are netted, the status should change to show as netted.
- A netted id of the resultant (new) message should be appended to the individual underlying records. This net id should be passed to GSSR.
- The net item should then be inserted back into the Release queue in the appropriate ordering. Net / split items should be ineligible for auto release to ensure second touch always happens.

#### **4.3.7.2. Automated Process for Netting**

The automation of the netting process will be a long term GCCM goal. Therefore at this stage, the netting will be done on a manual basis. Detailed specifications for automated netting will be done at that stage. Netting could only be performed if the counterparty agrees.

#### **4.3.7.3. Un-Netting (Unbulking)**

A user will either highlight items from a release queue and select un-netting or from the netting screen input counterparty/customer and/or currency to identify flow that needs un-netting. User will unselect or uncheck a netted box and click ok.

Once the transaction is affirmed, the net\_id will be removed from the original individual transactions and the resultant combined message. The system should:

- Change the status from 'Netted' to 'Unnetted'
- Re-insert the original individual transactions in the Release Queue.
- Remove the combined resultant message from the Release Queue.
- Mark the combined resultant message transaction for 'DELETION' or 'NOT to be Released' so that it gets cleaned out as part of the nightly process.

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Note once released a bulk message cannot be amended through the system though could allow cancellation.

#### 4.3.7.4. Splitting

Items that have been selected for splitting at the Intra-day Release phase will result in multiple messages being created from a single record. User will select the item to do the split.

<u>Initial Payment</u>						
<u>database</u>						
Bank	bank account	debit/cred	Amount	CCY	Value Date	Ref ID
Chase	12345	debit	\$1,000,000,000.00	USD	July 17, 2004	001F

<u>split</u>																						
Chase; account 12345	-\$1,000,000,000.00		<div> <div>To Generate Payments</div> <table border="1"> <tr><td>-\$250,000,000.00</td></tr> <tr><td>-\$250,000,000.00</td></tr> <tr><td>-\$300,000,000.00</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td>Residual</td></tr> <tr><td>-\$200,000,000.00</td></tr> </table> </div> <div> <table border="0"> <tr> <td>S1001F</td> <td><input checked="" type="checkbox"/> Check Box 4</td> </tr> <tr> <td>S2001F</td> <td><input checked="" type="checkbox"/> Check Box 5</td> </tr> <tr> <td>S3001F</td> <td><input checked="" type="checkbox"/> Check Box 6</td> </tr> </table> <div> <div>User has to click OK before payments are generated</div> <div>This residual amount will go down as each of the entered split payments are ok</div> <div>If user wants to unsplit an item, the residual will increase</div> </div> </div>				-\$250,000,000.00	-\$250,000,000.00	-\$300,000,000.00						Residual	-\$200,000,000.00	S1001F	<input checked="" type="checkbox"/> Check Box 4	S2001F	<input checked="" type="checkbox"/> Check Box 5	S3001F	<input checked="" type="checkbox"/> Check Box 6
-\$250,000,000.00																						
-\$250,000,000.00																						
-\$300,000,000.00																						
Residual																						
-\$200,000,000.00																						
S1001F	<input checked="" type="checkbox"/> Check Box 4																					
S2001F	<input checked="" type="checkbox"/> Check Box 5																					
S3001F	<input checked="" type="checkbox"/> Check Box 6																					

A box should open showing the amount of the item to be split, with an input box and a list of the payments to be generated and total left.

Users will then input the size of the first payment and okay, this instruction should then populate the to-be generated list and the total left should reduce. Users should be free to continue adding individual payments until they are okay with the remaining amount, which will become a payment as well to ensure full amount is available for release. At this point the to-be generated list of instructions and an instruction representing the total left should be inserted into the Intra-day Release queues with the same format and urgency as the original item.

Users should be able to highlight an item in the to-be generated list and delete it. The total left should be amended by the amount cancelled.

The resultant new message will be sent back to the queue for release with the appropriate priority. Note that to ensure the process is properly controlled, especially as the system may allow cross netting, the process of netting and splitting should require two separate users (or four eyes). Specifically CM User 1

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would net / split messages and then a second distinct CM User would have to release the resultant message(s). In fact net / split items should be ineligible for auto release to ensure second touch always happens.

<u>intraday release queue</u>			Original Payment Amount	Split Payment Amount	Ref Id	Split Ref Id
MT 202	Chase	12345	-\$1,000,000,000.00	-\$250,000,000.00 USD	July 17, 2004 001F	S1001F
MT 202	Chase	12345	-\$1,000,000,000.00	-\$250,000,000.00 USD	July 17, 2004 001F	S2001F
MT 202	Chase	12345	-\$1,000,000,000.00	-\$300,000,000.00 USD	July 17, 2004 001F	S3001F
MT 202	Chase	12345	-\$1,000,000,000.00	-\$200,000,000.00 USD	July 17, 2004 001F	

The SSIs including additional data fields should be replicated across the split and residual messages. In addition the original messages amount and reference should be appended into the additional data field.

Once the items are in the in release queue it should be possible to highlight split items and reverse the splitting.

#### Notes

1. GCCM needs to keep track of splitting and unsplitting.
2. It should ensure that the sum of all splits + residual = original amount.
3. If there are splits and none of the whole has been released, allow cancellation but adjust for residual.
4. If there are splits and one of the splits has been released, do not allow cancellation of the whole. Cancellation of the individual amounts should be allowed.
5. By certain point of time during day, alert message to user if sum of splits released <> original amount.
6. Users should not be able to net a split item.
7. Users should be able to unsplit items; if part of the split has been released items will be unsplit to the total less the already released amount (Using example 250 released; unsplit creates 750 single amount)

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#### 4.3.7.5. Reporting

At the end of each day GCCM to review that day's payment traffic and identify currency and USD payments that were sent to or receipts that came from the exact same SSIs or to and from the same GARM number. Reports would be generated showing all possible net combinations.

In addition users should be able to an individual GARM id (Lehman customer account) and External Bank Account Number (option to select on Customer Bank Name or Customer Bank Account Number or ABA number) and review the netting options that weren't utilised for an individual GARM id.

Summary

Local Currency Amounts									US\$ Equivalent Amounts		
GARM id	External RW Account	Agent Bank	Currency	Customer Bank Account #	Customer Bank	Payments	Receipts	Total Net	Payments	Receipts	Total Net
123456	12345	Chase	USD	11111	BONY	(1,000,000.00)	2,500,000.00	1,500,000.00			
213457	88883334	Citibank	SING	222222	BONY	(1,000,000.00)	350,000.00	(650,000.00)			
213457	88884443	Citibank	TWD	222222	BONY	(2,000,000.00)	6,578,000.00	4,578,000.00			
9392933	12345	Chase	USD	33333	Fleet	(15,000,000.00)	20,000,000.00	5,000,000.00			
948493	12345	Chase	USD	888888	HSBC	(25,300,000.00)	15,000,000.00	(10,300,000.00)			
948493	34567	Chase	GBP	888888	HSBC	(3,050,000.00)	3,000,000.00	(50,000.00)			
948493	87789	Chase	FRF	999999	HSBC	(6,404,000.00)	4,000,000.00	(2,404,000.00)			
948493	99344	Chase	DEM	888888	HSBC	(74,324,000.00)	6,400,000.00	(67,924,000.00)			
948493	77356	Chase	CHF	999999	HSBC	(1,745,000.00)	740,000.00	(1,005,000.00)			
Double-click to drill down to see details											

Wouldn't make sense to have subtotals by GARM id on the local currency side but it would on the US\$ equivalent

Detail

Payments

Date Format needs to be consistent with Region

GARM id	Currency	Account #	Customer Bank	Value Date	GCCM ref id	Ref id	Net Id	Split id	Local Currency Amount	Agent Bank Name	Agent Bank Account #	Source system ref id	Source system
948493	GBP			08/12/04									
948493	GBP			08/12/04									
948493	GBP			08/12/04									
948493	GBP			08/12/04									
948493	GBP			08/12/04									
948493	GBP			08/12/04									
GBP Payments Total									(3,050,000.00)				
Receipts													
948493	GBP			08/12/04									
948493	GBP			08/12/04									
948493	GBP			08/12/04									
GBP Receipts Total									3,000,000.00				

Will be populated with individual records denominated in GBP. If USD Equivalent is clicked, then the report will show an extra column " USD equivalent amount". Total on Local Currency Amount by currency within GARM. Total should match the number on the Summary report.

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#### **4.3.8. Book and Real World Cash Balances**

GCCM will host a large number of external accounts, currently approximately 3000, that are managed through a variety of processes. In particular differing accounts are funded versus their actual real world balance at the end of day, actual real world balance at start of day, end of day expected book balance, projected actual balance or some combination of these processes.

To cope with this variety it will be simpler will for GCCM to track both real world and book balances for all the external accounts and let the users of GCCM responsible for Funding accounts to decide the appropriate balance to use when inputting / creating FUND movements. In practice individual accounts will continue to be funded against the appropriate balance for the controls and information for the account.

In addition the system should be able to present running balance data based on the current real-time book balance or real world start of current / end of prior of day balance. In time GCCM D&R should be able to take in intraday external account balance updates and show these alongside the current system generated balances.

Therefore as part of the tracking of activity on accounts, for each account GCCM D&R should record

- Start of Day Book Balance
- Real World Start of Day Balances

And be able to track / create:

- Running Intraday Balances based on Booked Activity starting from Book Balance
- Running Intraday Balances based on Booked Activity starting from Real World Balance
- End of Day Book Balance for Accounted activity

In addition for accounts where external information is available, GCCM should also be able to create

- Running Intraday Balances based on Settled Activity starting from Book Balance
- Running Intraday Balances based on Settled Activity starting from Real World Balance

And / or track

- Actual Intraday / End of Day Balances

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#### 4.3.8.1. Sources of Information

The following table list source / calculation method to be used for each for the above balances

Balance	Source
Start of Day Book Balance	Prior working day's End of Day Book Balance for Accounted activity
Real World Start of Day Balances	<p>GSSR for current start of day balances for the external accounts.</p> <p>GCCM should also record date of last statement feed to show whether balance is current real world or last known GSSR balance.</p> <p>Note where accounts have been grouped on GSSR the individual sub-account statement balances will be required.</p>
Running Intraday Balances based on Booked Activity starting from Book Balance	<p>Calculation process that should continually update (note for usability users should be able to freeze balance on screen). Balance would be net of:</p> <ul style="list-style-type: none"> <li>• Start of Day Book Balance</li> <li>• All individual payments and receipts booked or assigned to particular nostro</li> <li>• Any Projected booking figure</li> <li>• Any FUND entries already booked across account</li> </ul>
Running Intraday Balances based on Booked Activity starting from Real World Balance	<p>Calculation process that should continually update (note for usability users should be able to freeze balance on screen). Balance would be net of:</p> <ul style="list-style-type: none"> <li>• Real World Start of Day Balances</li> <li>• All individual payments and receipts booked or assigned to particular nostro</li> <li>• Any Projected booking figure</li> <li>• Any FUND entries already booked across account</li> <li>• If available any currently failed activity carried over from prior day</li> </ul>
End of Day Book Balance for Accounted activity	<p>Calculation process that should continually update (note for usability users should be able to freeze balance on screen). Balance would be net of:</p> <ul style="list-style-type: none"> <li>• Start of Day Book Balance</li> <li>• All individual payments and receipts booked or assigned to particular nostro that have been Accounted for. That is released to accounting.</li> </ul>

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	<ul style="list-style-type: none"> <li>Any FUND entries have been Accounted for.</li> </ul>
Running Intraday Balances based on Settled Activity starting from Book Balance	<p>Subset of balance that is used for Running Intraday Balances based on Booked Activity starting from Book Balance (if everything settled and there was no outstanding projection amounts then balances would agree.)</p> <p>Calculation process that should continually update (note for usability users should be able to freeze balance on screen). Balance would be net of:</p> <ul style="list-style-type: none"> <li>Start of Day Book Balance</li> <li>All individual payments and receipts that have settled and so Matched</li> <li>Any FUND entries that have settled and so Matched</li> </ul>
Running Intraday Balances based on Settled Activity starting from Real World Balance	<p>Subset of balance that is used for Running Intraday Balances based on Booked Activity starting from Real World Balance (if everything settled and there was no outstanding projection amounts then balances would agree.)</p> <p>Calculation process that should continually update (note for usability users should be able to freeze balance on screen). Balance would be net of:</p> <ul style="list-style-type: none"> <li>Real World Start of Day Balances</li> <li>All individual payments and receipts that have settled and so Matched</li> <li>Any FUND entries that have settled and so Matched</li> <li>Any prior failed activity carried over that has settled and so now Matched</li> </ul>
Actual Intraday / End of Day Balances	<p>Expected to be external feed of current balance information with time stamp at which last update received.</p> <p>Should also allow for ability for users to input balance with a time stamp.</p>

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#### **4.3.9. Process Name: On line Reporting – Ref 1.3.2.1**

This section defines the screens that the various users will interact with the core system via and outlines the basic functionalities for the various user classes. In particular the screens will be used to track the funding positions for the Firm overall and by individual external account. It is worth noting that these screens will also form the basis of further Modules of GCCM and should be able to incorporate more than just cash balances in the position screens and disbursement and receipts flows as users drill down.

The various screens will have a similar look and feel but will show different representations of the data in the D&R database with the following three basic views:

1. Currency Positions
2. Account Position Reporting
3. Account Activity Reporting

Depending on the users set-up they will open to one of above three default views and will have access to the accounts they are authorised for. This may range from one Internal Business account for a business user to all accounts for a Treasury user. As the layouts will be web delivered a user with access to more than one layout should be able to run them simultaneously through multiple web browsers.

Users should be free to select their own opening screens and the system should remember this for next time the user access the system. More specifically though users may have access to a large number of accounts they should be able to select sub-sets of accounts (almost as if favourites) that they can focus in on by creating their own version of the following three screens. This will be particularly useful in CCM, where the funding of a large number of external accounts is assigned to a particular group and then further allocated to members of the group but with the understanding that any one member of the group can cover for the others. Hence a particular user would have access to an entire range of accounts yet focus on a limited more manageable number.

It is for example expected that the Cash and Collateral Management would open to the Account Positions view with a default view showing all real world nostro accounts in the region of the user.

The screens should be enabled so that users can add in formula driven columns from a predefined list for major calculations and / or special functions or create their own simple calculations based on just addition or subtraction.

Note at the lowest level of drill down, that is transaction level reporting through a single account, each flow or transaction should represent what it is, that is whether it is a payment a funding movement or for later modules a DVP or Financing trade. To begin with this list of types will be probably limited to:

- PAY for an external payment / receipt
- FUND for the funding of a real world nostro
- INTPAY for an Internal payment / receipt
- PROJ for a projected figure
- REC for an entry created to clear a nostro REConciliation break



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Though it may be worthwhile considering further sub-divisions, for example source of request or margin posting, etc.

#### **4.3.9.1. Standard Views**

Though the on-line reporting should be flexible to allow users to define specific groupings of accounts and messages that they include in the views as laid out below, a series of preset unalterable set of views should also exist so that various users can consistently bring up the same set of data and therefore aggregated positions.

This is particularly important in Treasury where the Funding Desks and Cash Management will both be looking at account and balance information. This is because for the funding of external accounts, a difference in the resulting numbers due to the use of dissimilar parameters in the views could result in inaccurate funding of the Firm's positions and increased interest burn.

#### **4.3.9.2. Currency Position Reporting**

This layout will allow a user to view traffic by currency and the current funding position for that currency with drill down to the external accounts within a currency. It is expected that the Treasury Funding Desk would open to the Currency Positions view.

The screen should open to a menu bar and a list of currencies available to the users with the current date set as the value date for display. GCCM will need to net activity in its database to create an overall currency balance for all real world accounts of that particular currency except those that have been explicitly excluded.

##### **4.3.9.2.1. Excluded or Restricted Accounts**

Certain external accounts will or will have accrued cash balances over time that may not be available to the Firm for funding other activity within the Firm.

An example of such an external account would be an exchange margin account, where funds have been placed with the exchange to support initial and variation margin for open positions and to return funds from the margin account would cause the Firm to be under collateralised at the exchange.

These external accounts should then be excluded from the currency summary positions and segregated during the drill down to individual accounts to show the funds are not readily available.

##### **4.3.9.2.2. Suggested views**

The net balances of the items in cash terms should be displayed against each currency using book opening position and GSSR supplied balance as the starting points.

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During later modules the value of available collateral in a currency should appear alongside the free cash numbers that will be represented as a result of D&R activity.

Currency	Book Value Cash		Account Balance Cash	
	SOD Cash	Current Projected EOD Cash	SOD Cash	Current Projected EOD Cash
	SOD – Start of Day			
	EOD – End of Day			

By clicking on book value of an account balance the users should be able to drill down to show rolling balance information based on the criteria of book balances or real world account balances being used (note SOD on S would have been EOD on S-1).

Currency      Prior day      Current Day      Forward Day 1, etc

The prior day's end of day balances and the net balances for the next five days forward data activity should be shown to the left and right of the currently selected value date, as appropriate, to give a run of seven working days' balances alongside each other. The user should be able to amend which seven days' balances are shown.

The user should be able to double click on a date to split out by status the net of the items in each currency for the value date double clicked on. The total should move to the right.

Currency      Start of Day      Projection      Repair      Pending Settlement      Settled      Accounted for      Total

The user should be able to click on a currency to drill down to show the split for that currency by real world nostro (grouping because they are at same agent). Accounts with items that could effect the balance (E.g. pending cancellations) should be highlighted a different colour.

Currency								
Nostro group	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total	

Items not yet assigned to an external nostro should be shown as a distinct line in the drill down. Restricted or exclude accounts could be represented as a specific nostro group.

If nostros are grouped, then the user should be able to click down again to bring up the individual nostro accounts.

Currency								
Nostro group								
Account	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total	

Once the individual nostro accounts are highlighted the user should be able to drill down to the individual items and drill into these as well.

#### 4.3.9.2.3. Example of Drilldown views for currency reporting

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Date		EAME Region							
14-Sep-04									
		Book		Book					
Ccy	Book SOQ Balance	Book SOQ Funding Required	Book SOQ Balance	Book SOQ Funding Required					
CHF	74,175.18	40,538.18	21,040,538.18	40,538.18					
CZK	155,205.89	155,205.89	155,205.89	155,205.89					
DKK	24,208.52	3,202.54	11,610,202.54	3,202.54					
EUR	28,661,794.26	704,583,776.60	844,434,798.49	704,583,776.60					
GBP	1,975,809.40	86,112,492.00	291,755.27	86,112,492.00					
HUF	175,816.60	175,638.60	175,638.60	175,616.60					
ILS	4,730.29	88,085.05	88,085.05	88,085.05					
KWD	-	-	-	-					
LTL	-	-	-	-					
LYL	-	-	-	-					
NOK	77,646.71	8,142.45	2,101,887.55	8,142.45					
NZD	-	-	-	-					
PLN	855,700.37	15,670.70	15,670.70	15,670.70					
RON	-	-	-	-					
SEK	17,358.34	1,293,817.53	111,025,842.49	1,293,817.52					
TRL	-	-	36,832,605,553,090.00	-					
USD	58,541,318.03	524,305,838.00	505,050.00	524,308,392.80					
14-Sep-04									
Currency	Account Ref	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total	
GBP	HSDC Reporc		291,755.27	1,427,230.37	10,575,120.00	125,673,120.00	87,053,074.95	40,090,000	347,446,304.39
	HSDC MAIN		15,800.00	2,506,000.00	174,591,230.00	125,881,120.00	100,000,000.00	7,634,102	153,876,412.00
14-Sep-04									
	Ccy		GBP						
	Deal Type	Originator	GC/CM Id	Source Trade ID	Deal	Confirmed In	Confirmed Out	Status	
	PAY	RUC - FX Acct 12345		123456	31243 - Goldman Sachs	1912318		0 NEW	
	PAY	ITS - PB Acct 98764		456789	1037838U	2553.35		0 NEW	

#### 4.3.9.2.4. Euro-in currency reporting

Note if applicable the user should be able to double click on Euros to split out by status the net of the items in each Euro-In currency and Euros for the value date shown.

#### EURO Breakdown

In Currency 1	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total
In Currency 2	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total
EUR	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total

The user should then be able to drill down again to see the underlying transactions as above, but the system should show the original currency amounts rather than the Euro equivalent.

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#### 4.3.9.3. Account Position Reporting

To allow a user to view the net balance and traffic through a class of Accounts, with the flexibility to filter to a specific grouping

The screen should open to a menu bar and a list of account type groupings (intercompany account, nostros etc) available to the users with the current date set as the value date for display. GCCM will need to net activity in its database to create a running balance by account group. The account group the user opens to will be set by them and should be flexible enough to be reset easily and allow ranges such as all accounts, general groups such as LBI Real World Nostro or even specific individual accounts such as LBI's intercompany accounts in GCCM with LBHI.

The net balances of the items in cash terms should be displayed against each account grouping by currency. The user should also have the ability to request a USD equivalent number alongside the currency total. The prior day's end of day balances and the net balances for the next day should be shown to the left and right of the currently selected value date, as appropriate, to give a run of three working days' balances alongside each other. The user should be able to amend which days' balances are shown.

Account Grouping	Currency	Prior day	Current Day	Forward Day 1
------------------	----------	-----------	-------------	---------------

The user should be able to double click on a date to split out by status the net of the items in each currency by the status for the value date double clicked on. The total should move to the right.

Account Grouping	Currency	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total
------------------	----------	--------------	------------	--------	--------------------	---------	---------------	-------

Items not yet assigned to an external nostro should be shown as a distinct line in the drill down.

The user should be able to click on an account grouping to drill down to show the split for that each account. Accounts with items that could effect the balance (E.g. pending cancellations) should be highlighted a different colour.

Account group								
Account	Currency	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total

The user should be able to filter by currency.

Account group								
Currency								
Account	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total	

Once the individual accounts are highlighted the user should be able to drill down to the individual items and drill into these as well.

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#### 4.3.9.4. Account Activity Reporting

This section outlines how to allow a user to view traffic through the Internal Business Accounts within their grouping by logging onto Lehman Live. It is for example expected that the Operations and Business Users would open to the Account Activity screen view.

The screen should open to a menu bar and a list of accounts available to the users with the current date set as the value date for display. Accounts with items pending repair should be highlighted a different colour to currently 'clean' accounts.

The user should be able to click on an account to drill down to the activity passing through that account for the selected value date. A status mark should be shown alongside the individual items and again items pending repair should be highlighted a different colour.

Accounts should be laid out along the lines of:

<i>Account Number by EOD</i>	<i>Account Title</i>	<i>CCY</i>	<i>Cumulative Historical Funding (SOD Balance)</i>	<i>Current Days Funding</i>	<i>Net Funding</i>
----------------------------------	----------------------	------------	--	-----------------------------	--------------------

The user should be able to drill down on an account to view the activity that has created the current balance:

<i>Account</i>	<i>GCCM Ref</i>	<i>Source Ref</i>	<i>Beni</i>	<i>CCY</i>	<i>Amount</i>	<i>Value Date</i>	<i>Status</i>
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#### 4.3.9.5. Functions Available in Reporting Menu

This section outlines the functions that a user could have access to from the on-line reporting screens.

By default all users should be allowed to change the view through which they see the data for the accounts they have access to and they should be able to click on an account to drill down to the activity passing through that account for the selected value date. A status mark should be shown alongside the individual items and again items pending repair should be highlighted a different colour.

In turn all users should be able to click on an item to bring up on screen. The screen should show the current status and version of the request in full, potentially over a number of pages within the screen. If an item has been confirmed, the record should show the relevant payment references and a copy of the outgoing and incoming messages if appropriate. If the user selected item is awaiting repair and the user has the requisite rights, they should have the option to transfer the message to a repair queue / request edit rights to the message and so be transferred to the amendment and approval page with the item.

The user should also have access to the following functions depending on the user rights once they have highlighted a record:

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4.3.9.5.1. Cancel or confirm / reject cancellation of a record;

Cancelling an item should cause it to go into a pending cancellation confirmation status and all activity in GCCM on this record should pause. *This should update the status of the item particularly for funding purposes.*

- If the cancellation of an item is rejected, processing should continue as normal.
- If the cancellation of an internal request is confirmed, it should be immediately reversed.
- If the cancellation of an external request is confirmed and the external message has not been sent then any external message should be cancelled. Funds should reverse out of balance reporting and accounting with next available funding value date for the currency – this may require user intervention from CM to confirm reversal date.

This means that it is possible that an item cancelled before its message goes out will need to generate accounting for the expected settlement value date with a reversal booked for the next funding value date. (Interest accruals on the funding would continue until reversal processed.) These two dates could be the same or not.

- If the cancellation of an external request is confirmed and the external message has been sent then

For incoming money, the booking should reverse out of balance reporting and accounting with next available funding value date for the currency – this may require user intervention from Cash Management to confirm reversal date. (Interest accruals on the funding would continue until reversal processed.)

For payments, the booking should be flagged with the requirement that a cancellation message will need to be sent. The sending of the cancellation message should be noted on the trade (this info should be passed to GSSR). Nothing else occurs at this point. Once funds are returned an offsetting item with the value date of the receipt can be passed by the appropriate Reconciliation team.

GCCM D&R should if possible generate and send the cancellation message.

4.3.9.5.2. Amend or confirm / reject amendment of a record;

Requesting access to amend a record should cause it to go into a pending amendment status and all activity in GCCM on this record should pause.

Normal users should have access to amend SSIs only on external requests. These changes will need to be approved by the appropriate number of users for the internal Business Account.

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For other fields the users should normally cancel and rebook. If an incorrect internal Business account has been quoted the user can pass an internal movement for the correct internal Business Account to credit the incorrect account or cancel the request and rebook.

- CM users should have access to all fields including amend SSIs, value dates and amount. It is their responsibility to ensure changes can be funded for. Should the amendment include back-valuation, the back value process should be followed for accounting and when the message is generated.
  - For internal requests value and amount fields can be amended, Beneficiary account should not be amended. To amend a Beneficiary the users should cancel and rebook.
- If the amendment of an item is rejected, processing should continue.
- If the amendment of an internal request is confirmed, the original booking should be reversed and the amendment passed
- If the amendment of an external request is confirmed and the external message has not been sent then any external message should be cancelled. The external message should then regenerate with amended SSIs.
- If the amendment of an external request is confirmed and the external message has been sent then

For incoming money, the booking should update details on the record but do not generate a new message. Intraday Reconciliation and Accounting should then proceed as appropriate for the external nostro in use.

For payments, the booking should be flagged with the requirement that an amendment message will need to be sent. The sending of the amendment message should be noted on the trade (this info should be passed to GSSR). Intraday Reconciliation and Accounting should then proceed as appropriate for the external nostro in use.

GCCM D&R should if possible generate and send the cancellation message.

#### 4.3.9.5.3. Raise a query on an item.

Users should be free to raise queries on entries to their Business accounts that they don't understand or recognise. From within the transaction, D&R should allow users to raise a request that auto create an email about the currently selected item from the user's MS Outlook email account. Basic details of the item should be appended to the email with the user free to insert additional text.

The query should be sent either to originator / amender of a request if known, a nominated group for the originator / amender of a request or a general group such as Cash Management or Firm Balancing; where originator could be an individual if manually input or a user group for a system fed item.

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#### 4.3.9.5.4. Search Facilities

Within either the summary or detailed screens, the user should be able to select another value date and refresh the screen to bring up the account history for that value date. Once in an account the user should be able to bring up multiple value days, in date order, on one screen. The user will be restricted at this point to the data stored in the production database.

The user should also be able to conduct a search for a request or receipt across any or one of the select number of the accounts he has access to, based on the minimum criteria possible. Finally users should also be able to search for records created, authorised, etc. by a particular user or source system across accounts.

For trend or longer term investigations the users should be directed out of the production database to the archive or reporting database.

#### 4.3.9.5.5. Initiate Auto-Funding Process – detailed in Section 4.3.8.2

### 4.3.9.6. Effect of Back Valued Requests

D&R is designed to allow back valued items to be sent for processing. For internal requests back-valuations will be processed as if they had occurred at the time. External requests will be processed on a best efforts basis and any external costs to complete the back valuation will be passed back to the originator of the requests.

For account reporting back-valuation requests will be used to restate the end of day and subsequent start of days for internal accounts (e.g. originator of request and beneficiary of internal only movement) but for external accounts will be shown as an adjusted / back-valued figure in the next available funding day.

#### 4.3.9.6.1. Internal accounts

Specifically D&R will insert item into the nearest date live in system for the requested valued date. So as the live D&R database will maintain five value days prior to current value date in line with DBS, a back valued item less than five days old would be inserted into cash-flows for the relevant date. The balances for the subsequent end of day and start of day balances should then be restated up to the current value date.

For items older than five days these should be inserted into cash-flow for the oldest date on the live system. The balances for the subsequent end of day and start of day balances should then be restated up to the current value date.

To allow for this split D&R should record value date of item (for interest purposes), date posted (date shown in cash-flow) and the requested or effective date of the item. Note for an item submitted today for a currency where today was still a valid funding day then all three dates would record today's date.



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4.3.9.6.2. External accounts

To ensure the external accounts can be correctly funded, back-valued external payments should be shown in the current funding days cash-flows as a new item annotated with requested value date; that is start and end of day balances for interim days should not get restated and the back-valued item is only reflected in current day and going forward for reporting purposes.

Note D&R should request authorisation for any bank charges for back-valuing the request from the business so that these can subsequently be attributed to business once debited.

4.3.9.6.3. Example

For example assume today is Monday August 2<sup>nd</sup> and a payment is sent for value Thursday July 29<sup>th</sup> across an External Account.

- GCCM End of Day balance for 29<sup>th</sup> is not updated on screen.
- Start & End of Day balances for 30<sup>th</sup> are not updated on screen.
- Start of Day balance for 2<sup>nd</sup> is not updated on screen.
- Payment is inserted into cash-flows 2<sup>nd</sup>, with annotation that an item is back valued.
- Payment is sent with value today.
- Authorisation of back-valuation charges is requested from originator / group
- Amendment is sent to bank requesting value date change

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#### **4.3.10. Process Name: Funding Accounts – Ref 1.3.2.2**

To create a process to allow the funding of the Firm's real world nostros accounts and to use this process to create a way for the system itself to by propose movements to fund individual or ranges of real world nostros accounts. The system should allow manual funding of nostro accounts as well as the automatic funding of nostro accounts.

##### **4.3.10.1. Manual Funding**

A Cash Management user of GCCM should be able to easily see and calculate the amount of cash a real world nostro requires to support the payment activity or would be long following receipts at a given point in the day by reviewing the current and pending items for that nostro account in GCCM. The user should then be able to input a FUND item into GCCM to flatten the nostro account.

The FUND item will be a real world movement between two Lehman external accounts that are on GCCM; cash must move and in this the booking differs from other entries where the beneficiary account is a Lehman account where the default would be accounting journals only.

The Cash Management (CM) user would create the FUND request either via the web page input screen or from within GCCM by first identifying the external account the FUND item should happen against and then requesting a FUND movement.

If the CM user creates the FUND request via the web-site the CM user should ensure that at least the pay and preferable both sides of the required movement are entered. If the CM user creates the request via the GCCM functionality, then the request should come up with amount and value date blank for input by the CM user. This is to allow for intraday funding of an external account where cash may be moved to and from an external account independent of the current actual or projected balance on the account.

The CM user should be able to request the payment of the inputted amount of funds into the external account or to pay the funds from the account. Once the user confirms the FUND request amount, GCCM should identify the external account that the FUND movement will go to / come from for long / short positions respectively. It will do this by ascertaining the Paying (if it exists) or Funding entity for the legal entity the external account being funded resides in and append the settlement details of the real world nostro for the identified entity. If the Paying or Funding entity has multiple real world nostros the nominated default should be chosen.

The CM user should then be offered the opportunity at this point to override the chosen nostro account for any other real world nostro. This is to allow activity to be moved directly between accounts to reduce or net cash flows before funds are transferred back up to main nostro accounts. (For example this may be used to reduce intraday impact of large cash flows when securities have been bought into one depot, moved free to a second, out of where the securities are secured financed and the funds in the second are required in the first.)

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A second CM user should then be required to review and approve the request before the item can be processed any further. At the point of approval a request for the opposite entry (i.e. a pay for a receipt and a receipt for a pay) should be created against the opposing external account in an approved state.

Note when the accounting for the FUND entry is created, the journals should reflect the actual cash movement via any the appropriate funding intercompany accounts rather than assume the default account was chosen.

Both requests should populate the Pending Release numbers for the appropriate external accounts.

#### **4.3.10.2. Automatic Sweep facility**

To speed the process of funding multiple external accounts (real world accounts now total 3000+ and it is labour intensive to manage this amount of accounts) GCCM should have an auto sweep process that can create FUND items.

External accounts may have a target balance and a minimum activity balance both for long and short activity. Where these numbers have been set the system should allow for these when creating the automatic funding numbers. These are expected to work as follows:

- Minimum Short balance – a short balance that is not cost effective to cover for a particular external account (for example a payment would cost USD2 and the balance is only –USD2). If the balance is less than the minimum do not create the FUND item. If the amount is greater (i.e. shorter) then create a item to fund the external account to zero (or the target balance if set).
- Minimum Long balance – a long balance that is not cost effective to cover for a particular external account (similar to above example a long balance of USD2 would not be cost effective to cover). If the balance is less than the minimum do not create the FUND item. If the amount is greater (i.e. longer) then create a item to fund the external account to zero (or the target balance if set).
- Target Balance – a long balance that the external account should be funded to other than zero; expected to be used for minimum reserve requirements. If the balance is less or more than the target fund the external account to the target balance by paying funds from the account if the balance exceeds the target and by paying funds into the account if balance is below the target.

##### **4.3.10.2.1. Excluded or Restricted Accounts**

Certain external accounts will have accrued cash balances over time that may not be available to the Firm for funding other activity within the Firm.

An example of such an external account would be an exchange margin account, where funds have been placed with the exchange to support initial and variation margin for open positions and to return funds from the account would cause the Firm to be under collateralised at the exchange.

These external accounts should then be excluded from the automated funding process.

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#### 4.3.10.2.2. Suggested Process

A CM user should be able to highlight a single, range, group or all external accounts and run the auto sweep function. Note it should be possible to run the process multiple times on a single external account in a working day.

A group could reflect a set of external accounts at an agent that have been set-up to be funded under a netting agreement with the agent. In this case the Fund process would be based on the net balance of all the external accounts in the group and create a single movement rather than a movement per account.

The auto sweep function should then create a series of FUND entries, one per selected external account or group, with the next available payment day given the current time of day for the currency of the external account. As these entries are automatically created the SSIs should default to the Paying (if it exists) or Funding entity for the legal entity of the selected external accounts.

The amount to be funded should also be automatically added and should be the net balance of all items projection or pending still in the system for the given value plus the GSSR supplied start of day balance (or ledger start of day balance, if this option has been selected as part of the account set-up) or the projected SOD balance for forward value date movements.

There should be no override function for either SSIs or amount and the user should be limited to accepting, copying to a manual request or cancelling each proposed FUND entry; with copying effectively the cancelling of the auto record and the creation of a manual FUND item where the amount can be amended.

Once approved each FUND entry should as above create its opposite and insert both flows into the appropriate account numbers and release queues.

#### 4.3.10.3. Impact on Currency Funding

Though this is the correct way to process these FUND entries, because two opposing entries are created per movement, from a currency funding perspective the total net currency position has not changed. Therefore the CM user needs to ensure that the requirement they are funding for is represented in GCCM in some form.

This requirement is easily fulfilled when an account is being funded to cover payments or receipts already in or due to go into GCCM (as their entry adjusts the total currency requirement appropriately), it may not be so easy for the funding of securities depot activity.

##### 4.3.10.3.1. Use of Projection Process – Ref 1.3.2.3

For external depot accounts the underlying funding requirement is unlikely to show in GCCM automatically as DVP trades are not acknowledged by MT900 or MT910s that could be used to create the requirement. Thus for external accounts where the requirement is not automatically input at the

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implementation of GCCM, the CM user must ensure that the appropriate funding number is input into the system.

Therefore the user or the system will need to create a projected requirement in the account that reflects activity that is either yet to be entered into the system or resides outside the system. For the securities depots Module 2 of GCCM should negate the need to undertake this process. Projected requests should be either:

- Manually input into the system using the Projection number facility offered by the web-input process. Note the web-input process should allow these funding (projection) numbers to be loaded into GCCM via the file load process or as individual projection amounts.
- Lifted automatically in aggregate from either the various settlements systems generating the underlying securities traffic for a depot or from an external source.

#### 4.3.10.3.2. Projection Clean-up Process – Ref 1.3.2.4

While external accounts are funded against a projected or manual input it will assist CM users if there is a semi-automated process to update or amend the numbers as further activity is booked creating additional or reduce requirements.

For example on the day prior to settlement, S-1, the securities account may show a requirement to be funded to cover purchases of USD1 billion that is reduced on settlement date as a result of same day financing by one of the CFU or EFG desks. In this case the CM user would have input a requirement of USD1bn on S-1 for S and then updated the requirement on S through the day to provide the Treasury Funding Desk and the automated funding process with a correct currency requirement for the external account and overall position.

This process could either be a forced revalidation of the projection figures at certain points during the day, e.g. half an hour before the normal funding deadline for a currency, the ability to upload amendments to numbers via the web-front end without having to cancel and rebook or a more general clean-up process that removes all projection figures for yet to be funded positions at the start of each day, so users have to re-input.

#### 4.3.10.3.3. Next Day Balance

Where balances have been funded on a projection number – for example a securities account – there will be a difference between the ledger balance excluding the projection number and the actual balance.

Thus there is an open question of how to correctly track the ongoing account balances for these external accounts without creating a separate process to store the projection numbers day on day and then to incorporate this number into the running balances as the true ledger balance will be the combination of the ledger balance in the settlement system and the ledger balance in GCCM. Where the ledger balance in the settlement system represents the book value of the cash settlement of the securities flow and the ledger balance in GCCM represents the book value of the funding of the account.

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In reality though as these accounts are funded to against actual balances (i.e. real world balances) the functionality in the system to define whether the account should be funded to the book or real world balance should allow the funding process to continue. With the users selecting that depot accounts are always funded versus the real world balance either actual or calculated from the advised start of day, booked flow and projection figures. And the ledger balance will simply deviate from the real world balance.

Hence given the split ledger representation of the activity the reporting of particular system breaks for example where the ledger balance and real world balance differ by more than the known unpreadvised, depot balances would be excluded automatically.

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#### **4.3.11. Incoming Bank Confirmations for Matching and Applying Funds – Ref 1.4.1**

Up to this point both requests for payments and notifications of receipts are handled in the same way for all currencies. In this matching process however, there will be two different processing models which will specifically address the handling of Accounting.

Under the Simple Process accounting entries will be generated regardless of whether there is a confirmation from the bank for a payment or an acknowledgement of a credit for any pre-advice. For accounts selected to run via the Complex process, accounting entries will be generated only if there is a confirmation from the bank of a payment or a credit that can be applied to an Internal Business account or similar.

In order to determine which processing model will be followed, the setup will be determined at the currency level with an override at the individual GCCM account level, as part of the Account Table.

##### **4.3.11.1. Controlling the Generation of Accounting Records**

Both models rely on the same basic matching engine, it is just that under the Simple process all real world requests can be accounted for at the close of the settlement day and under the Complex process accounting can be restricted to only acknowledged payments and applied credits.

###### **4.3.11.1.1. The Simple Process**

In this model any incoming acknowledgements will be used but will not hold up the accounting of individual entries. And it is assumed that requests are funded pending settlement regardless of fails.

This model is likely to be used for currencies which do not currently have the same day liquidity to allow the funding of fails and accounts where incoming acknowledgements are unavailable or unreliable.

During the defined business day for the specific currency of an external account, entries should be matched if a notification arrives. Once matched, the status of the request will change to matched and the item should be accounted for.

A list of notifications of unpre-adviced items will be available to the user to review if required. Unapplied debits and receipts can be passed to Suspense if required.

At the end of the defined business day for the specific currency of an external account, requests that have not been matched should be accounted for. Unapplied items should remain on the nostro.

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#### 4.3.11.1.2. The Complex Process

In this model any incoming acknowledgements will be used and the accounting will be dependent on the acknowledgment being received either in GCCM or by a CCM user manually acknowledging the item. And it is assumed that requests are funded pending settlement but fails can be funded for.

This model is likely to be used for currencies which have the same day liquidity to allow the funding of fails and nostro accounts where incoming acknowledgements are available and reliable.

During the defined business day for the specific currency of an external account, entries should be matched if a notification arrives. Once matched, the status of the request will change and the item should be accounted for.

A CCM user should have the ability to put an item into a matched status overriding the lack of external notification. Two options should be available to the CM user, these are:

- Option A) Confirm item to source systems and create accounting.
- Option B) Confirm item to source systems but do not create accounting, instead put item on hold. The item should remain open until an electronic confirmation arrives or the CM user updates the status to option A above, say next day, at which point the accounting should be created in GCCM as per normal.

Option B will create a reconciliation break for the owner of the Internal Business Account if they create their accounting either as a result of the confirmation or in advance of the confirmation.

A list of notifications of unpreadvised items will be available to the user to review from which it will be possible to be able to create bookings back to an Internal Business account. Unapplied debits and receipts can be passed to Suspense if required.

At the end of the defined business day (could be shorter than real world account opening) for the specific currency of an external account, requests (*Open Question treat payments and receipts the same?*) that have not been matched should be reversed out (by rejecting request) of the real world nostro, associated funding numbers and the originating internal Business Account (*Open Question reverse or propose reversal for CCM approval so that items can be investigated first?*) and notification sent to the originating system that this is the case.

#### 4.3.11.1.3. Handling of Bulk, Split or Unapplied Items

- 1) Bulk items should be accounted for if the notification of the net movement has been received.



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Individual Payments									
Ref Id	Bank	Bank Account	debit/credit	Amount	Currency	Value Date			
001A	Chase	12334	debit	100000	USD	July 21, 2004			
033B	Chase	12334	credit	74000	USD	July 21, 2004			
0446Q	Citibank	678909	debit	250000	USD	July 21, 2004			
555J	Citibank	678910	debit	300000	USD	July 21, 2004			
0546Q	Citibank	678909	debit	550000	USD	July 21, 2004			

Bulked									
database									
Ref Id	Bank	Bank Account	debit/credit	Amount	Currency	Value Date	Net ID		
001A	Chase	12334	debit	100000	USD	July 21, 2004	AA11		
033B	Chase	12334	credit	74000	USD	July 21, 2004	AA11		
0446Q	Citibank	678909	debit	250000	USD	July 21, 2004	AB22		
555J	Citibank	678910	debit	300000	USD	July 21, 2004			
0546Q	Citibank	678909	debit	550000	USD	July 21, 2004	AB22		

bulk items to be sent									
MT 202	Chase	12334		-16000	USD	July 21, 2004	AA11		
MT 202	Citibank	678909		-800000	USD	July 21, 2004	AB22		

Matching									
database									
Ref Id	Bank	Bank Account	debit/credit	Amount	Currency	Value Date	Net ID	Match Seq	
001A	Chase	12334	debit	100000	USD	July 21, 2004	AA11	1	
033B	Chase	12334	credit	74000	USD	July 21, 2004	AA11	1	
0446Q	Citibank	678909	debit	250000	USD	July 21, 2004	AB22	1	
555J	Citibank	678910	debit	300000	USD	July 21, 2004		1	
0546Q	Citibank	678909	debit	550000	USD	July 21, 2004	AB22	1	

bulk items sent									
MT 202	Chase	12334		-16000	USD	July 21, 2004	AA11		
MT 202	Citibank	678909		-800000	USD	July 21, 2004	AB22		

confirmation of payment									
MT 900	Chase	\$16,000.00	12334	July 21, 2004	USD				
MT 900	Citibank	\$800,000.00	678909	July 21, 2004	USD				
MT 900	Citibank	\$300,000.00	678910	July 21, 2004	USD				

note bank, RW number, amount and currency name

2) For split items the portion of the item that has matched should be accounted for.

Initial Payment									
database									
Bank	bank account	debit/cred	Amount	CCY	Value Date	Ref ID	Split ref id	Urgency	Split Amount
Chase	12345	debit	\$1,000,000,000.00	USD	July 17, 2004	001F	S1001F S2001F S3001F	Y	\$250,000,000.00 \$250,000,000.00 \$300,000,000.00

split									
Chase; account 12345		\$1,000,000,000.00	To Generate Payments						
			\$250,000,000.00	S1001F	<input checked="" type="checkbox"/>	Check Box 4			
			\$250,000,000.00	S2001F	<input checked="" type="checkbox"/>	Check Box 5			
			\$300,000,000.00	S3001F	<input checked="" type="checkbox"/>	Check Box 6			
			Residual	\$200,000,000.00					

payment sent									
MT 202	Chase	12345	-250000000	USD	July 17, 2004	S1001F			
MT 202	Chase	12345	-250000000	USD	July 17, 2004	S2001F			
MT 202	Chase	12345	-300000000	USD	July 17, 2004	S3001F			

match									
database									
Bank	bank account	debit/cred	Amount	CCY	Value Date	Ref ID	Split ref id	Urgency	Split Amount
Chase	12345	debit	\$1,000,000,000.00	USD	July 17, 2004	001F	S1001F S2001F S3001F	Y	\$250,000,000.00 \$250,000,000.00 \$300,000,000.00

Match									
MT900	Chase	12345	250000000	USD	July 17, 2004	S1001F	MS1001F		
MT900	Chase	12345	250000000	USD	July 17, 2004	S2001F	MS2001F		
MT900	Chase	12345	300000000	USD	July 17, 2004	S3001F	MS3001F		

assumptions made such as split ref id sent and received back from banks

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Note the residual 200mm should also generate a payment for release, this is not shown in the example for clarity.

3) Any items not applied or reversed on value date become reconciliation breaks to be investigated after value date.

#### **4.3.11.2. Basic Matching Engine**

The engine will take in confirmations received from external banks / sources and attempt to match these against requests already in the system. Items that are not matched will be placed into an unapplied queue and will be available for review during the day.

As part of the processing of confirmations, GCCM will store the step in the auto-match process which a match was found for a particular confirmation and the number of criteria an item matched on for the manual match process. This is required for MIS purposes and to produce the successful matches.

Note that each incoming notification should be segregated by the external account it is confirming activity for and the matching engine should only allow requests and notifications to be matched if both items are for activity through for the same real world nostro account.

For items that were netted, the matching has to be performed against the netted amount and for split items, partial matching needs to be accommodated.

##### **4.3.11.2.1. Auto-Matching Rules**

Incoming notifications should be passed through the auto-matching process to see if they can be matched to request already in the system; a confirmation of a payment (debit) has to be processed to match to the GCCM outgoing payments and any confirmation of credits would be matched to any pre-advice received by GCCM. In addition details of the notification should be stored with the item it was matched against.

There will be a limited number of matching sequences in which confirmations can be auto-matched against a GCCM record. If the confirmation is not auto-matched, it will then default to an unapplied queue for manual matching. Unmatched requests in the system should remain in the 'current' status, e.g. released, until matched.

If a debit or credit notification is received and no request has been sent by GCCM, then GCCM should put the items in an Unapplied queue for the account quoting remitters reference.

If a debit or credit notification is received and a request has been sent by GCCM, then they should be processed using the following matching steps. Fundamentally, payments should match with a confirmation of payment and receipts with a confirmation of receipt with amounts matching up.

As mentioned previously, as part of the external account static table, there will provisions for:

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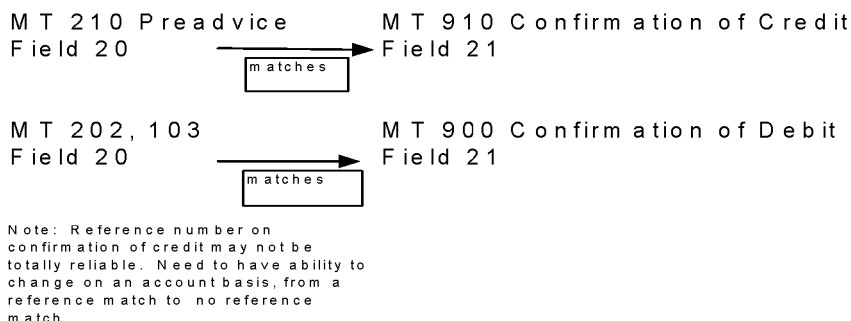
- Identifying whether the simple or complex process will be used to override the currency setup. It was mentioned that the accounting method will be identified at the currency level but an override would exist at an account level.
- Identifying the substring of characters to match on as required for Partial Matching and to provide the flexibility to change the strings of characters. This will be refined over time.
- Identifying whether to use reference matching or not. It is a known problem that banks may not provide the correct reference number so this would provide flexibility to change for example from Reference Match to a Partial Match.

We have an issue with the banks incorrectly matching items which may mean that we can't use reference matching for incoming funds. Therefore we will need a way to switch off options / reduce matching functionality by account and for payments and receipts independently without effecting whole principle of automated matching (e.g. tick box of rules to be used).

Once an item is matched, that specific item should not be available for matching again in case subsequent credits come in.

4.3.11.2.1.1. Match Sequence 1 - Reference Match

- Real world nostro account is same
- Check reference numbers supplied on notification against references quoted on outgoing messages. For SWIFT messages, the matching of reference numbers will be :



Field 21 is related reference so Field 21 should match with Field 20 of original request. Field 20s will not necessarily match with each other and Field 21s will not necessarily match with each other

- Check amount and currency
- If there is a match, then the update the status of the item in GCCM. Most payments should match under reference matching.
- If there is no match, then proceed to 2.

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#### 4.3.11.2.1.2. Match Sequence 2 – Partial Reference Match

- Real world nostro account is same
- Check limited / partial reference numbers supplied on notification (same as above) against references quoted on outgoing messages. (For TWS trades this could be last six alphanumeric characters of the transaction reference number.) Note GCCM D&R will need some way to generate the reference masking to extract the partial match by account. This will be refined as we progress.)
- Check amount and currency
- If there is a match, then the update the status of the item in GCCM.

If two or more ‘outstanding’ GCCM requests exist for a partial ref match for the same amount and it is impossible to match an incoming notification to one of them, then place the items in the unapplied queue.

#### 4.3.11.3. Unmatching items.

Users should have the ability to unmatch an item. If an item is unmatched any processed accounting should be reversed and the item placed in an unapplied queue.

#### 4.3.11.4. Unapplied Queue - Manual Matching

If no match is found automatically, then GCCM should let the user match up items manually. GCCM should allow the user to select an item in the unapplied queue and should propose matches based on the rules above (the matching sequences).

A screen with GCCM is needed to perform the manual matching.

Data to be shown on the screen relating to each of the notifications and payments/pre-advice:

Real World Nostro Account	
Name of Bank	
Amount	
Currency	
Customer Name	
Customer Account	
Unique Ref id	
Message Type	MT 103, MT 210 etc
BIC code	

Suggested options on the screen are as follows:

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To view potential matches ( sequence 4)	Clicks	To Perform Matches To Apply funds	Provide list of the Matching Sequences Available Provide space for user to input parameters to match : bs entity, exact amount, amount tolerance, name of bank, bank account number, BIC code
To view all unmatches			
To unmatch			
To apply funds			

Potential matches - all items with matching sequence of 4 should be displayed.	User will highlight items	User to Click on Match button
		User to Click Unmatch button

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To View Unmatches		
Bank Credits	User will highlight items	User to Click on Match button
GCCM preadvices	If one item is selected, provide dropdown menu of the matching sequences or the parameters. Once entered, bring up all the others meeting criteria. For example, a bank credit select and parameter of bank account entered, then GCCM preadvices with same bank account should be displayed. User select the GCCM preadvices, then click Match	
Bank Debits		
GCCM Payments		

---

To Unmatch		
Bank Credits		
GCCM preadvices	User to highlight items	User to click Unmatch button
Bank Debits		
GCCM Payments		

- If the user feels there is a match in the proposed list, they should be free to select the item and match it.
- If not the user should be able to widen the search parameters to bring up other potential matches. If the user then finds one or more items that match the outstanding entry, they should be free to select it / them and match.
- Once an item is in a matched status, it should then be processed as if auto-matched.

#### 4.3.11.4.1. Proposed Matching - Amount, Value, Currency and Remitter/Ordering Institution

When a user selects either a GCCM request record(s) or a confirmation(s) from the bank; GCCM should generate a list of potential matching items from the same real world nostro account.

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To do this GCCM D&R should compare the selected item with all the other records for the same account that are unmatched or unapplied at that point. For each of the items GCCM D&R should note the number of matching criteria it finds for the pair of items.

The list of proposed matches should then be generated by showing each item with at least three matching criteria in descending order of number of matches (i.e. from seven to three). Users should be able to easily expand list by decrease matching criteria cut-off from three to two, one or zero (in which case all items would be shown).

- For Payments / Confirmations of debits check the following details against the information contained in the unmatched or unapplied records (each match counts as one matched criteria):
  - Real world nostro
  - Confirmation of Debit / Payment as appropriate
  - Amount
  - Value
  - Currency
  - Originator of request (e.g. Lehman's sending BIC matches)
  - Beneficiary details if available
- For Receipts / Confirmations of Credit check the following details against the information contained in the unmatched or unapplied records (each match counts as one matched criteria):
  - Real world nostro
  - Amount
  - Confirmation of Credit / Receipt as appropriate
  - Value
  - Currency
  - Originator of Payment (e.g. GS or Citibank)
  - Beneficiary details if available

Note the check may need to be against interbank settled amount (i.e. prior to charges) and for incoming credits the originator quoted should be checked against either ordering customer or bank. (We are dependent on information supplied to ourselves.) Where charges have been debited GCCM D&R should allow automatic journaling of the charge as a fee expense.

#### **4.3.11.5. Matching Status and Accounting**

Outgoing activity that has been released to agent banks should be tracked and compared with incoming notifications. When a notification has been 'matched' against a GCCM request, the status of the request in GCCM should be updated.

The status of the request in GCCM should update as settled for the matched notification. A status update should then be sent to the Originating Source system of the request with the appropriate status.

If the notification indicates that the item has settled, then GCCM should process the accounting associated with the funding and settlement of the request.

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GCCM	User Action	Validation	Pass/Fail	System Action	Internal System Status	Published Status Comment
Matching *see below for preadvices				<i>Every item will be unmatched</i>	Unmatched	
		Auto Match	Pass	Process Accounting, associated funding and settlement or request. Send status message back to originator	Automatched	Settled
			Fail	Send to Unapplied Queue		Unmatched
	Manual Match		Pass	Process Accounting, associated funding and settlement or request. Send status message back to originator	Manual match	Settled
			Fail	Send to Unapplied Queue		Unmatched
	If previously matched, and then unmatched			Reverse any accounting and place in pending queue.		Unmatched
Manual create of records for unapplied items	Applied/Unapplied Funds user selects items to create GCCM records  User then input required info		Pass	Process accounting for the control account, suspense. Send 'Settled message back to originator'	Manual created entries	Settled

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#### **4.3.12. Unapplied Items – Ref 1.4.2**

If a notification has been received of items that have not been requested or preadvised (fee charges or unpreadvised funds), a user should be able to select the items and create entries to apply the funds in GCCM. This would be similar to the current FPS process for users and R&D to claim unapplied funds

As part of the entry creation process the user should be asked for the internal Business or Control Account that an item should be passed to and the value date (default today). This internal account number should be validated and then a record created in the real world nostro and the internal account to represent the entry. Note the internal account chosen by the user will vary depending on the item and could be an Internal Business account for an unapplied credit or a fee / interest account for a unapplied debit for example.

The status of the item should reflect as matched and it should then be processed as if auto-matched (as shown above in the “Manual Create of records for Unapplied items” row).

The user should be free to select individual or a list of items to apply. For multiple records the user should be presented with the option of applying all the selected records with the same value date and to the same internal account or to confirm the internal account number and value date for each record. (The ability to amend value date from the current funding day should be limited to CCM and regardless of users be no earlier than the date of the unapplied item.)

It is understood that the regions currently manage the investigation of unapplied items differently and so the control process for the investigation of items will be driven by the users. To permit this GCCM should allow the auto posting of items to suspense where this function has been selected.



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To view potential matches ( sequence 4 )	Clicks	To Perform Matches	Provide list of the Matching Sequences Available Provide space for user to input parameters to match : bs entity, exact amount, amount tolerance, name of bank, bank account number, BIC code
To view all unmatches		To Apply funds	
To unmatched			
To apply funds			

Potential matches - all items with matching sequence of 4 should be displayed	User will highlight items	User to Click on Match button User to Click Unmatch button
---	---------------------------	---

To View Unmatches	
Bank Credits GCCM preadvices  Bank Debits GCCM Payments	User will highlight items  User to Click on Match button User to Click to Apply Funds

When user selects option to create entries to apply funds, another screen is provided:

Internal Business Account: In House Bank Control Account: Value Date : Default to current date Suspense Account??	User will select from list to apply; and then confirm. Once confirmed, status is auto-matched  Or User select items to pass to Suspense
--	---

Note: To view match; to unmatched; to apply should bring up the basic screen of info.

#### 4.3.12.1. Suspense

As above, the user should be free to select individual or a list of unapplied confirmations of debit / credit items to apply, including having the ability to apply the posting to a suspense account for further investigation. The suspense account should default to the main suspense account defined for the entity that owns the real world nostro account, though where more than one suspense account exists for the entity that owns the real world nostro account users should be able to override the default suspense account to one of the others owned by the entity from a list presented to them by the system.

If items are applied to suspense at this point, then the GCCM functionality to make an internal payment should be used to pass entries between suspense and the correct internal Business or Control Account.

##### 4.3.12.1.1. Unapplied – New York

As noted above, the regions investigate unapplied items differently and in New York items are generally moved from the nostro to a suspense account after a set period of time. Items are then investigated or returned to the originator if required.

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GCCM D&R should not disrupt this process and so allow users to apply items to suspense either via an originating system (simply processing the request as required) or via the process described above.

#### 4.3.12.1.2. Example of Unapplied Credit – Applied to Suspense and then Investigated

1. Initially a bank credit of USD 10mm came in, say, to Chase
2. End of day, sent to suspense

Debit LBI Nostro Account	10,000,000
Credit LBI Nostro Suspense	-10,000,000

3. After research, able to identify owner and apply:

Debit LBI Nostro Suspense	10,000,000
Credit LBI Fixed Income Nostro Control Account	-10,000,000

4. If after research & a set number of days, can't apply item, then return:

Debit LBI Nostro Suspense	10,000,000
Credit LBI Real World Nostro Account	-10,000,000

#### 4.3.12.1.3. Unapplied Bank Credits – London

In London, any unapplied bank credits will remain in the nostro account and it will not be moved to a ledger or control account. GSSR will be performing a daily reconciliation between bank account statements vs. GCCM. It is envisioned that a feed from GSSR will be brought into GCCM so that the accounting entries for items left in the unapplied bank credits would be accounted for on a backdated basis.

#### 4.3.12.2. Auto Post of Unapplied Items

A number of suggestions have been made to automate the process of applying funds from an external nostro to various Internal Business Accounts. This section details these suggestions and how they could work in practice.

It is expected that GCCM would attempt to identify a likely home for unapplied funds and will then pass sufficient details from the incoming confirmation to the identified system (as FPS does for ADP) to allow the system in turn to apply the funds to a customer or ledger account.

In particular a limited number of the Firm's systems (ADP potentially) are understood to have a process that applies funds to internal ledger accounts after reading the information contained in the notification from the bank. It would be useful to understand this further as the auto-application of items based on

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trawling the incoming notifications for information and then using this to apply funds to internal account could be extremely useful.

4.3.12.2.1. Always Apply Funds to a Particular Internal Business Account for a specific External Account

In the case of ADP, currently FPS doesn't perform any matching. All incoming advices are sent back to ADP where the matching is performed. ADP matches on account number and validates the details of the payment against the master account file for account name and address.

Similarly GCCM D&R should allow users to link up an external account with a particular GCCM account, say an Internal Business Account, for the posting of all unapplied funds to on an automated basis.

So as an item arrives, it is first reviewed against any existing preadvice notifications for the external nostro account and if a match is not found, then the system should place the item in an unapplied queue for the external nostro account. This unapplied queue is then automatically cleared by creating a 'matched' GCCM record using the process for manual creating records described above, with the account to be credited as the linked account that has been defined in advance.

In turn GCCM D&R should publish details of all items thus 'matched' back to the source system(s) that are identified as having posted to the particular GCCM Business account.

4.3.12.2.2. Always Apply Funds to an Internal Business Account for specific Formatting / References

GCCM D&R should allow users to create rules for the automatic application of funds in external accounts to a particular GCCM account, say an Internal Business Account, based on some user defined criteria.

The criteria should be based the information contained in the fields normally available on a confirmation message sent via the banks (e.g. a MT910) and should include the ability to specify such things as common references amongst other text. The system must also allow combinations of criteria to be specified.

So as an item arrives, it is first reviewed against any existing preadvice notifications for the external nostro account and if a match is not found, then the system should place the item in an unapplied queue for the external nostro account. This unapplied queue is then automatically reviewed against the predefined criteria set.

If a criteria set is found to tally with the information supplied in the confirmation, then the unapplied queue should be cleared by creating a 'matched' GCCM record using the process for manual creating records described above, with the business account to be credited linked to the criteria set in advance.

In turn GCCM D&R should publish details of all items thus 'matched' back to the source system(s) that are identified as having posted to the particular GCCM business account.

4.3.12.2.3. Always Apply Funds to an Internal Business Account dependent on look-up to GARM

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GCCM D&R should automate the application of funds in external accounts to a particular GCCM internal account, say an Internal Business Account, based on Customer Account Numbers supplied with the confirmation of credit.

CM user should be able to define strings that could be a Lehman customer account on a Firm settlement system, i.e. a template for the account numbering on the settlement system. This could be considered a special case of the general criteria look-up outlined above.

For example \*765????\* could indicate a LBI RISC client account number and so the default assumption would be to post the items through to an internal account for investigation by a RISC user but the number of false positives can be reduced by looking up in GARM to confirm the client account number exists and is in fact on a LBI RISC client account.

When an item arrives, it is first reviewed against any existing preadvice notifications for the external nostro account and if a match is not found, then the system should place the item in an unapplied queue for the external nostro account. This unapplied queue is then automatically reviewed against the predefined criteria set, and thence against the specific customer account form templates.

If the system is able to tally what appears to be a client account number with the predefined strings to look for, it should send this potentially client account number to GARM to see if GARM can find a similar record in its database.

If it does then this should be communicated back to the GCCM including information on the client account owner's name and other basic details. In turn these details should be compared with the data supplied with the confirmation to see if the account owner name agrees. If it does then the unapplied queue should be cleared by creating a 'matched' GCCM record using the process for manual creating records described above, with the business account to be credited linked to the criteria set in advance.

If the system is not able to match the client account names, then item should remain in an unapplied status but with details of the GARM match kept with the D&R unapplied record so a user can review the data to see if the match was correct but for example a shortened version of a name had been used.

If GARM does not return a match, the item should remain in the unapplied queue for the external nostro.

In turn GCCM D&R should publish details of all items thus 'matched' back to the source system(s) that are identified as having posted to the particular GCCM business account.

#### 4.3.12.2.4. Issues of Missing Customer Account Numbers on Incoming Credits

Currently matching incoming credit confirmations to pre-advice and / or automating the application of funds based on client account details is made more difficult as the incoming credit confirmations do not always quote the customers' account numbers.

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To further aggravate the situation, even if customer account details have been submitted to the agent bank for book transfers, i.e. where the customer banks with the same bank as Lehman, confirmations of credits have been advised to ourselves with no client account number. This is especially true in the case of MTS.

Therefore CCM have been in discussion with the nostro banks about potential solution based around the specific formatting of payments into client accounts that may resolve / reduce the prevalence of the issue.

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## 5. Accounting Engine and In-House Bank Sub-Ledger – Ref 1.5

The following chapter details the key features of the D&R sub-ledger that will be used to record the activity of the in-house bank.

GCCM D&R will internalize cash flows through intercompany transactions supported by an in-house bank concept that should enable CCM to minimize the number of real-world bank accounts the Firm owns by replacing external nostro accounts with internal business accounts. It is envisaged that the in-house bank will perform the clearing services for all Firm disbursement and receipts and automate the funding of the activity as a by-product of handling the instruction.

The in-house bank will keep an arm's length relationship with other Firm entities and keep a clean audit trail of all requests it receives and maintain accounting entries for each participating subsidiary in its books. It will be possible to settle intra group requirements via book entries across inter-company accounts instead of cash entries through real-world bank accounts

It is not expected that the in-house bank will be a single entity or a registered bank though CCM are looking to leverage the Firm's bank licenses wherever possible. For example LBHI UK Branch funds LBIE and in turn LBHI funds LBHI UK Branch, thus both LBHI and LBHI UK Branch would be considered funding entities for the Firm and form part of the in-house bank on GCCM D&R. It is expected that LBI will act as an in-house bank to itself.

The in-house bank will be set-up so that the Firm's current and future businesses and applications would communicate with D&R as if communicating with a real-world bank. The in-house bank will host 'customer' accounts (where customer refers to Treasury support view of the internal business lines), to be referred to as Internal Business accounts that will represent a business 'nostro' or cash account with the in-house bank. Businesses will be able to request payments from their business account either to another part of the Firm or to a third party.

All accounts will be available on-line for the users to review in real-time and via GSSR at the end of day for business owners to reconcile activity through their business accounts against their own trade or customer bookings.

### Key Features:

- For businesses with external accounts and existing systems the implementation should be as simply as a change in nostro agent bank and so the impact should be limited. External accounts will be hosted with GCCM alongside internal business accounts and external nostro accounts should be migrated to internal business accounts over time without impacting the payment flow.
- The total of the accounts within each non Treasury entity on GCCM should reflect intercompany balance with a Treasury entity. At DBS once both GCCM and the trading systems have passed the journals the sub-ledger balances should net to zero except for true real world account balances.

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- Businesses will be able to have as many internal business accounts within the in-house bank as they choose. Treasure will not impose any constraints on these. GCCM D&R will report the activity through each internal business account:

The in-house bank will also host the external cash accounts of the firm and will be used to track activity through the external accounts and fund them. The various views of the funding requirements and account activity are discussed in the previous chapter.

The in-house bank will apply interest to intercompany and internal business accounts at the Treasury Index rate to recover the cost of funding the various cash flows for individual businesses and entities. In addition D&R will allow the allocation of fees back to the business units based on activity as opposed to the generic allocation that exists today.

## **5.1. Sub-ledger Infrastructure**

### **5.1.1. In-House Bank Architecture**

As a sub-ledger the D&R in-house bank will consist of a representation of the Firm's entities that have rules defining how they interact with each other. Within D&R, each entity will in turn:

- Consist of a series of accounts, for example
  - Nostros
  - Intercompany Interest and Principal accounts
  - Control accounts / dummy nostros
  - Suspense
  - Other including Plug accounts
- With each account will be linked to a series of properties, for example:
  - A DBS account
  - BPM code
  - Available currencies (if accounts are set-up as multi-currency only)
  - Produce statement for GSSR
- That is governed by a rule set
  - Rule set for entity will note how to settle a payment / receipt if a message comes through for it.
    - For example: LCPI movements in USD settled through NY In House Bank, European currencies through London In House Bank and Asian currencies through Tokyo In House Bank
  - Rule set for accounts will note how it behaves if a 'posting' comes through to it.
    - For example: Intercompany principle and interest lines in each entity must balance with equivalent account in linked entity and offsetting entry to posting must occur within each entity in pair.

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### 5.1.2. Legal Entity

GCCM D&R will be a sub-ledger that will post accounting entries to DBS on a daily basis. The sub-ledger will consist of a series of accounts that will be used to track the cash activity (internal and external) for the Firm. Each account set-up for a business within GCCM must reside in one of the Firm's entities. Each entity will in turn be linked with a Treasury entity that can fund movements through the entity. Activity between the entities will be recorded via a pair of intercompany accounts. Note entities will not have to be linked to the Treasury entity in the same jurisdiction as they domiciled and may change their funding relationship over time.

Journals will be posted between accounts to represent the movement of funds between the ledgers / accounts.

This section defines how a legal entity should be set-up and identified, its funding relationship, its external account structure if relevant and related information.

#### 5.1.2.1. Required Information:

##### 5.1.2.1.1. Legal Entity Table

This table will define basic details for the entity.

Field	Character	Comments
Legal Entity	Text	Name
DBS Legal Entity Number	Text	DBS Number
Legal Entity Number	Number	GCCM id
Legal Entity Address	Text	Postal Address
Legal Entity Owner	Text	Business / Ops owner
Functional Currency	3 letter code	Is this required?
BPM	Number	LB Management code for Owner
Business Line	Defined list	FID / Eq, etc
Business Line sub-division	Defined list	Within overall
Signing / Approval Process	Defined list	Mandate link to Signatories database Number of approvals required
Domicile Location	Text	Note this data can be supplied by NWM db if linked
SPV Flag	Y/N	
Treasury Funding Entity Flag	Y/N	
Specific notes	Note	General comments field for now; including code words? for common set-up concerns



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#### 5.1.2.1.2. Table Linking Entities

This table identifies an entities funding and paying entity, where relevant, for a particular currency.

Field	Character	Comments
Legal Entity Number	Number	Name
Paying Agent Legal Entity Number	Number	GCCM record id identifying entity that makes payments on behalf of entity for noted currency
Treasury Funding Entity Number	Number	GCCM record id identifying entity that funds the legal entity
CCY	Code	Allow option for all non specified currencies

#### 5.1.2.1.3. Default Accounts numbers

In addition for each entity a series of default accounts should be set-up to be used when a user does not complete all the optional details on a request or the system is unsure which account to use.

Field	Character	Comments
Legal Entity Number	Number	Name
D&R Account Number	Number	GCCM record id identifying account
CCY		
Function	List	Function the defined account is to be sued for from list of:  Internal Nostro, External Nostro, Seg, Back-up, Reserve 1, Low-Value, ACH, Funding Nostro, Suspense, Plug, Fees, etc.

For each entity an Internal Business Account, a Suspense and Plug account should be required.

#### 5.1.2.1.4. Entity Sub-Ledger mapping table

To allow users to translate entity numbers between different systems.

Field	Character	Comments
DBS Legal Entity Number	Text	Name
Sub-ledger	Text	From list of current originating systems
Sub-ledger Legal Entity Number	Text / Number	

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5.1.2.1.5. Authorised Currencies for Entity

It is assumed that not every currency set-up in GCCM D&R will be required for every entity as it is added into D&R. In fact some entities may only ever operate in one or two currencies. Therefore as part of the set-up for the entity, the entity should be assigned currencies rather than defaulting to all.

Field	Character	Comments
DBS Legal Entity Number	Text	Name
Currencies	Text	Select from drop down list

It should be possible to assign further currencies to an entity at any time.

The adding or assign of a currency should then drive the creation of accounts such as at least one internal nostro, one FX account, intercompany with funding entity for currency, P&L interest and charge accounts, plug and suspense in currency and finally conversion in currency.

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### 5.1.3. Business Line

Business lines cut across legal entities and will be the owners of the individual Business accounts that reside in GCCM. It is usefully to include this detail to allow businesses to extract all their accounts easily so they can understand their cash position / obligation to Treasury at any point in time. It will also aid reporting of volume statistics by business.

Each account will be assigned to a BPM code that will generally indicate the business that owns the account so the following tables will simply confirm the details for the users on GCCM. Also it may be worth considering extensions to the BPM code to ensure that CM have the level of detail they require for reporting purposes.

#### 5.1.3.1. Required Information:

##### 5.1.3.1.1. Basic Business Line Information

Field	Character	Comments
Business		
GCCM unique identifier		
BPM		LB Management code for Owner
Business level	Interger	For example Fixed Income / Equities would be highest roll-up as per BPM And so on down
Location		
Extended BPM		Allow sub-divisions of business for example by location – GCCM specific  Multiple Extended BPMs may role up to one BPM
Overall business Owner		
Payment fee recovery allowed	Y / N	Is recovery of payment charges from individual Business accounts owned by business line allowed?
Intercompany Interest recovery allowed	Y / N	Is recovery of intercompany interest expense from / posting of intercompany interest earnings to individual Business accounts owned by business line allowed?

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#### 5.1.4. Accounts

This section defines how an account should be set-up, identified, its external account if relevant and related information.

Accounts should be created via a user interface either through an existing request process such as the set-up of new ledgers in ITS and DBS or through a new procedure. In either case all account set-up should be under dual control and require at least an input and approval stage.

Accounts will be grouped for easy of investigation and balance or position reporting. These groupings will be definable using the static data included in the set-up of each account and the system should allow the groups to be set-up of by owner user, BPM, legal entity, currency, location, account type or some combination of these characteristics.

##### 5.1.4.1. Required Information:

###### 5.1.4.1.1. Basic Account Information

Field	Character	Comments
Account Number	Numeric / Character	Unique Ref May be non-sequential as ranges may be saved for particular purposes Format to reflect structure / purpose
Account Owner	Text	Business / Ops owner
Account Type	Defined list	Will define accounting / interaction rule sets Options <ul style="list-style-type: none"> <li>• Real World Nostro</li> <li>• Real World Cash / Depot</li> <li>• Intercompany</li> <li>• Internal Business Account</li> <li>• Fees</li> <li>• Interest</li> <li>• Suspense</li> <li>• Plug</li> <li>• Conversion</li> <li>• PPS Margin Accounts</li> <li>• Margin Accounts (?)</li> </ul>
Account Name	Text	
Currency	3 letter code	
Legal Entity	Text	Name
DBS Legal Entity Number	Number	DBS Number
DBS Account Number	Number	Account journals to be posted to
Sub-ledger	Text	System containing offset postings if applicable

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Sub-ledger Legal Entity Number	Text / Number	Sub-ledger entity number
Sub-ledger Account Number	Text / Number	Sub-ledger offset postings
Extended BPM	Number	GCCM code for Owner
Business Line	Defined list	FID / Eq, etc
Business Line sub-division	Defined list	Within overall
Signing / Approval Process	Defined list	Does account require 2 or 3 stage approval process? Are any limits involved such as LBI It is likely that this will only be used for the manually input items. Automatically fed items are assumed to have gone through the appropriate approval process within the originating system.
External Account Number	Text / Number	Note this data can be supplied by NWM db if linked
Segregated Flag	Y/N	Client money
Internal Group Account Belongs to	Name	

Note included in the list of account types are two types of Margin account. This is to reflect the differing margin process that exists.

#### 5.1.4.1.2. Linked Accounts

During the implementation of the system it is expected that as GCCM D&R intermediates between existing settlement systems and the nostro banks a one to one mapping will exist between the Internal Business Account and the external nostro account.

Specifically an existing nostro account used for example by source system A for entity B would remain open and available to the existing user day one until internalised at some future date.

However rather than having GCCM D&R simple act as a black box through which traffic for a nostro account passes through untouched, CCM would still want to have the requests validated and included in funding numbers.

Therefore the intention is to set-up two accounts representing the external account within the same entity on GCCM:

- An external nostro account that is linked to the payment channel
- An Internal Business account that is linked to the users and their source system

Users would release messages from their system quoting the new Internal Business account (or an account number that can be translated by GCCM to the new Internal Business account). GCCM would 'know' that this business account is linked to a specific external account and so would process the requests through this external account.

For the users it would appear as if their instructions are being processed as per their current set-up. At future point in time the requirement for the external nostro account would be reviewed and potentially closed. When this happens the link between the two accounts would become invalid but the source system

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would not need to be reconfigured to use an Internal Business account as this would have already happened.

Therefore a process / table is required to allow the linkage of Internal Business accounts and external nostro accounts. A suggested format for the table is

Field	Character	Comments
Account Number	Numeric / Character	Internal Account
Account Group	Character	To allow more than one internal account to be linked to an external account
Account Number	Numeric / Character	External Account

Correspondingly if confirmations of credit / debit come in for an external account that has been linked to an Internal Business Account, GCCM can use the table to identify where to apply any unapplied items automatically.

#### 5.1.4.2. Additional Information for External Nostros

Field	Character	Comments
Account Number	Numeric / Character	Unique Ref
External Account Number	Text / Number	Note this data can be supplied by NWM db if linked
Agent	Text	Agent Bank info for nostros Note this data can be supplied by NWM db if linked
Account Location	Text	Note this data can be supplied by NWM db if linked
External Account Number	Text / Number	Note this data can be supplied by NWM db if linked
GARM ref for SSIs	As GARM	
Complex Matching		Use this process for matching rather than default of Simple Matching
Additional Info	Text	
Additional Accounting Rules	Text	On top of basic defined for account type
Segregated Flag	Y/N	Client money
SPV Flag	Y/N	
Operating Cash Flag	Y/N	
Override day count for message generation	Number	Override currency default for value days prior to message value that external requests are generated
End of day target balance	Number	Balance to be targeted for end of day funding – default zero but will vary within regions
End of balance long balance threshold	Number	Balance threshold for end of day funding below which balance will be left – default zero (may not be zero as it may not be cost effective to say clear a balance of less than ten dollars long)
End of day short balance	Number	Balance threshold for end of day funding below which

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threshold		balance will be left – default zero (may not be zero as it may not be cost effective to say clear a balance of less than ten dollars short)
External Group Account Belongs to	Name	
Special CM feature	Defined list	E.g. Pooling / Sweep in place that could effect accounting and processes
Reporting Requirements		
Intraday Credit Limit		
Exclude account	Y/N (Default N)	Exclude from net currency balance reporting and auto fund / sweep processes.
Send MT210s or equiv	Y/N (Default Y)	Whether or not MT210 messages or equivalents should be sent externally
Swift Zengi Ref		May be included as part of SSI data if more relevant there

Linked to External Nostro accounts will be further static including

- SSIs
  - Including alternative external account numbers (i.e. other forms in which account number can be presented)
- Available payment channels

#### 5.1.4.2.1. Required Information for External Nostro Account SSI Data

The following table outlines the basic information that will need to be maintained on Lehman owned nostro accounts that will be maintained on GCCM D&R to allow payment and receipt messages to be generated to Fund the external accounts and release instruction requests correctly identifying accounts at the Firm's agent banks, etc.

Field	Character	Comments
Account Number	Numeric / Character	
Currency		
Pay / Receive / Dual		To allow for separate formatting for payment and receipt in case required
Intermediary Bank		
Intmd Additional Field 2		
Intmd Additional Field 3		
Intmd Additional Field 4		
Intermediary Code		
Intermediary Code Type		
Account with Bank		
AwB Additional Field 2		
AwB Additional Field 3		
AwB Additional Field 4		

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Account with Bank Code		
AwB Code Type		
Account with Bank Account		
Beneficiary Name		
Beni Additional Field 2		
Beni Additional Field 3		
Beni Additional Field 4		
Beneficiary Code		
Beneficiary Code Type		
Beneficiary Account		
Default Payment Type		E.G. MT103 or MT202
Generate Message		Assume Yes but allow No, in which case no messages are generated from GCCM D&R
Default Charge Option	OUR / SHS / BEN	As per Swift whether bank charges are split, taken by LB or beneficiary.  It is expected that individual messages will have override to this but this default should be picked up if not stated on individual request.

#### 5.1.4.2.2. Alternative External Account Numbering

Field	Character	Comments
Account Number	Numeric / Character	
External Account Number		Alternatives
Comment		Detail of where alternative used; E.g. seen on MT950

#### 5.1.4.2.3. Account Specific Cut-offs

The external payment and internal book to book cut-offs applied to the account by the agent.

Field	Character	Comments
Account Number	Numeric / Character	
Agent's External Payment Cut-off		Latest time a payment that will be external to agent can normally be released to the agent - CCM users can override and force payments out.
Agent's Internal Payment Cut-off		Latest time a payment that will be internal to agent can normally be released to the agent - CCM users can override and force payments out.



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#### 5.1.4.3. Additional Information for Intercompany Accounts

Field that defines extra information required for pairs of intercompany accounts.

Field	Character	Comments
Account Number	Numeric / Character	Unique Ref for Intercompany
Index for Interest		Index for calculating the interest on account
Account number of other account in pair		Account linked to account.
Withholding tax rate		If applicable for credit positions
Interest period		Default would be daily

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**5.1.4.4. Further background on the various account types and how they interact with each other**

5.1.4.4.1. Real World Nostro

Can be used to make payments and receive cash.

External account would be included in the reporting screens and the Funding process by default, though it should be possible to exclude individual accounts from the automated Funding process.

Internal movements to external account should be allowed though certain intra Lehman movements may paid real world. (Basic rule would be transfers to another business or external account in the same entity should be internal whereas transfers to an account in another entity would be external, particularly if either entity is regulated.)

5.1.4.4.2. Real World Cash / Depot

Primarily used for the settlement of securities trades and cash will be debited and credited automatically as a result of the securities trades.

External accounts so defined will be funded from central nostro accounts and should be included in Funding process by default.

Can be used to make payments and receive cash though expectation would be that this is very unlikely as cost will exceed Real World Nostro payment costs.

The particular sub-type of depot accounts would be Tri-party accounts, which may have different funding requirements.

5.1.4.4.3. Internal Business Account

Account used by the business to make payments from and receive credits to – their account with the in-house bank. The business account could be linked to real world account. (Internal and External entries should look similar at this level.)

Should post to a control / conversion line at DBS to which settlement systems post offset. At DBS business accounts should go flat if there are no breaks.

5.1.4.4.4. Intercompany

Intercompany accounts link a pair of entities and so exist in pairs: one in each entity representing the payable to / receivable from the other.

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Each non-Treasury entity will be linked to a single Treasury entity via a pair of intercompany accounts (one per entity) per currency. Treasury entities will have limited number of interconnections between themselves via a pair of intercompany accounts (one per entity) per currency.

Pairs of intercompany accounts should always been in line.

Multiple Internal Business Accounts will link to an intercompany. In effect the intercompany account represents the entity's position with the in-house bank and the Internal Business Accounts the sub accounts of the entity.

All activity involving movements between entities should flow across at least one set of intercompany accounts.

5.1.4.4.5. Fees

Expense account to which fees are posted – external cost passed on by agents and recovery of fees from business lines.

Should post to P&L accounts at DBS

5.1.4.4.6. Interest

Expense account to which interest is posted – external costs passed on by agents and recovery of funding / interest from business lines.

Should post to P&L accounts at DBS

Credit and Debit interest accounts should be separated at the sub-ledger level.

5.1.4.4.7. Suspense

Suspense accounts exist to allow items to be applied to a ledger so that they can be included in the cash / funding position but would not be the true destination account that funds should be applied to. In fact items should be moved from a suspense account to either another GCCM account or be returned to remitter within 30 days.

Reporting of the balance and unreconciled items in the suspense account should be done daily.

5.1.4.4.8. Plug accounts

Exist as default account that should be used when unable to determine second account in a journal.

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For example a debit/credit to an intercompany account must be offset with credit/debit to another account. This other account would have to be the Plug account for the entity if the actual second account did not exist, was an invalid choice or could not be determined.

Reporting of the balance and un-reconciled items in the plug account should be done daily.

#### 5.1.4.4.9. Conversion

Essentially an Internal Business Account used exclusively with Finance to move items through to DBS without having to set up full infrastructure at sub-ledger level.

#### 5.1.4.4.10. PPS Margin Account

External account used to by certain exchanges to cover changes in margin requirements. Exchanges have right to automatically debit / credit PPS accounts to cover / return short /long margin positions.

Accounts should be included in the automated Funding process but would not be used to make other payments.

- PPS Margin accounts are auto debit / credit accounts that can be zeroed daily as any other real world nostro and can be treated as such by GCCM though they should only be used for FUND entries not support free cash movements.

#### 5.1.4.4.11. Margin Account

External account used to represent margin requirement with exchanges – positions will always be long cash but that cash cannot be returned to holding company unless margin requirement is reduced.

As a result should be excluded from Funding process and also may be necessary to exclude from the cash balance reporting numbers or at least show as separate Operating Cash number that is not available for general use.

- The cash in these external accounts are not available to the rest of the Firm until the margin requirement reduces. Therefore these balances should not appear in the Currency Positions numbers to be used for funding or including in automated Funding process.

#### 5.1.4.4.12. FX Conversion accounts

These accounts will be used to manage the conversion of requests in currency A into currency B. They would generally be generic within an entity, so that cross currency bookings can be more easily facilitated without having to say convert EUR into USD to convert to GBP:

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E.g. LBHI's USD FX Conversion account and LBHI's GBP FX Conversion account rather than LBHI's USD GBP FX Conversion account (USD) and LBHI's USD GBP FX Conversion account (GBP)

Though it should be noted that pairs of specific currency conversion accounts may be set-up to handle specific conversions that will see higher volume of bookings, for example Euro In-currency conversions.

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### 5.1.5. Currencies

The following section outlines the minimum information that should be retained on a particular currency. The system should be flexible enough to add currencies in the future.

#### 5.1.5.1. Required Information

Field	Character	Comments
Currency	3 letter code	
Currency Name	Name	Full title
Day Count		
Working Week		Whether currency follows Western working week or includes Sunday but not Friday's
Holiday Calendar ShortCode		Default
Override day count for message generation	Number	Override currency default for value days prior to message value that external requests are generated
Default Interest Index		
Number of days forward to generate external messages		
Rounding		Number of decimal points messages can be quoted to.  Default 2 but JPY would be zero
Home Country		
Default accounting generator process		Simple or Complex – i.e. simple all items accounted for, complex only confirmed items accounted for on value date
Send MT210s or equiv	Y/N (Default Y)	Whether or not MT210 messages or equivalents should be sent externally

#### 5.1.5.2. Business Day

This table will define a normal business day for the currency and indicate difference from GMT of major market (i.e. New York for USD, Frankfurt for EUR).

Field	Character	Comments
Currency	3 letter code	
Opening Time External movements	Day : Hour	First point at which activity is likely to settle (requests can in fact be sent externally earlier). Internal activity can settle as soon as business day of system changes for currency.
Closing Time External movements	Day : Hour	Time at which system should close currency for external flows with current date
Closing Time Internal movements	Day : Hour	Time at which system should close currency for internal flows with current date.

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Hours different from GMT	+/- Hour	
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The internal cut-off will be after the external cut-off and will be the approximate point when postings to DBS are generated for the particular currency. After the DBS postings have been generated and sent, it is expected that the value date for the currency will roll forward.

Any requests received after this internal cut-off for the current system date should be treated as a back valued request.

### 5.1.5.3. Calendars and Working Weeks

The system should discount weekends and global holidays but if at least one currency is available on a day then that day should be counted as a working day for the system and so contribute to the days maintained on the system.

In particular the system will need to cope with working weeks that run from Sunday to Thursday inclusive as part of its initial implementation and so the system should be open for Sunday in addition to Monday to Friday.

- The firm already has external accounts open Sunday to Thursday but these are controlled Monday to Friday; for example Israel Shekials and is the process of opening accounts (or reviewing business requirements) for Saudi Riyal, Egyptian Pound and Iraqi Dinar accounts.

If DBS is not available to accept postings for a Sunday, GCCM D&R should post any activity including intercompany interest on the following working day for DBS (this would generally be the Monday in this scenario).

For calendars GCCM D&R should take in the default calendar for all currencies supported and ensure the system is available to accept and process activity on all valid business days for a currency.

- For example 25 December is a valid value date for JPY (assuming it does not fall on weekend) and so the system should be open.

However GCCM D&R should also take in alternative calendars to allow users to override the non-working day validation of value dates for days when the default calendar indicates that the currency should be closed but is in fact open.

- For example in AUD state holidays appear in calendars driven (referred to) by cities' business days that are not actually country holidays and so general cash and securities settlement can occur

If DBS is not available to accept postings for the given value date, GCCM D&R should post any activity including intercompany interest on the following working day for DBS.

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5.1.5.3.1. Calendar Required Information

Field	Character	Comments
Currency	3 letter code	
Holiday Calendar Name		
Holiday Calendar ShortCode		
Holidays	Date	



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### 5.1.6. Interest Indices

Similar to calendars and currencies, GCCM will need to maintain basic information and receive daily updates on the rates of certain standard interest indices. At the moment the source of this information is open.

Users should be able to define indices based on other indices. These manufactured or manually updated indices are likely to be attached to certain intercompany accounts / fee calculations where as most accounts will default to the Firm's Index rate.

#### 5.1.6.1. Required Information

##### 5.1.6.1.1. Background

Field	Character	Comments
Interest Index		
Comment		
Location definer		
Currency		
Autoload, Manufactured or Manual Update		
Source		If autoload
Reset frequency		Generally daily
Calendar		Would override currency calendar?
Accuracy		Number of decimal points rate quoted to
Interest basis		Would override currency calendar?
Underlying Index		For manufactured indices
Spread		For manufactured indices

##### 5.1.6.1.2. Rate information

Field	Character	Comments
Index		
Date		
Rate		
Roll forward flag		

Note where a rate update has not been received, it is better that the system rolls forward the prior working day's rate than have no rate in the field though users should have the ability to go in and amend rates for individual days.

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## **5.2. Accounting Per Request – Ref 1.5.1**

Accounting will be generated within the in-house bank once a request has passed through the payment engine outlined in Chapter 4. A flow chart and table showing the various stages that a request goes through as it is processed is available in Appendix 10.1.3.

### **5.2.1. Process Name: Validation for Accounting – Ref 1.5.1.1**

To ensure activity is correctly advised with sufficient data to create the correct journals to minimise the number of invalid accounting entries being generated, the requests should pass a validation process prior to creating the journals.

These checks are to be run in conjunction with the validation process undertaken elsewhere in the system but will flag specific items to prevent the failure of accounting entries to post to DBS.

Once items have been through validation process they should be passed to next stage at which GCCM should determine required accounting entries

Entries passed to the accounting engine should be checked for the following:

- Quoted accounts are both set-up in GCCM and required static data is available
- Value date
- Currency of payment is same as accounts
- Internal Receipts

These checks are not designed to necessarily fail instruction but will require booking to pass through additional processing. An issue should be flagged to the users via an Accounting Exceptions queue process.

#### **5.2.1.1. Identify Reversal Requests – Ref 1.5.1.2**

Entries that have been sent to the Accounting Engine as a result of the cancellation or amendment of a request that has previously been processed by the Accounting Engine should be flagged as a Reversal and processed separately.

All journals associated with the original request should be identified using the D&R audit trail. This list of journals should be validated against the journals that would be required to process the reversal between the two accounts as a new request. The two lists should be equal and opposite.

If the two lists of journals do not agree, then the discrepancies should be flagged to the user via the Accounting Exceptions queue process.

If the two lists agree, then the series of journals / account entries required to reverse the original request should be processed the sub-ledger.

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The effect on the accounts will be posted to DBS as part of the rolling batch process for accounting entries described later.

#### **5.2.1.2. Quoted accounts are both set-up in GCCM and required static data is available**

As soon as requests are passed to the accounting engine, there will need to be a process to check that the quoted accounts are in GCCM and that there is sufficient static available for the account for GCCM to determine the accounting required for the item.

If for what ever reason an instruction has got to this point and it turns out one of the accounts quoted on the instruction do not exist in GCCM or have insufficient information attached, then the item should fail into an Accounting repair queue.

CCM users should be able to monitor this queue and have the options to either repair items in the queue by amending account numbers or resubmit the request to accounting. (The latter assumes the request account / information has been added in the interim.)

#### **5.2.1.3. Currency of payment is same as accounts**

If either account has a different currency to the currency of the request, flag the instruction for FX processing if not already done so.

#### **5.2.1.4. Internal Receipts – Ref 1.5.1.3**

Internal Preadvice notifications should be diverted to follow the additional steps below to ensure that the booking of the receipt and the equivalent payment do not duplicate accounting entries:

1. Review activity through account to be credited to determine if offsetting internal payment has already been passed.
2. If so, then link the two requests and do not process the receipt any further.
3. If no payment is found and the debit account is quoted on the notification, then review activity through account to determine if offsetting internal payment is pending processing.
4. If so, then link the two requests and do not process the receipt any further
5. If no pending payment is found and the debit account is quoted on the notification, then email the debit account owner to request authorisation to pass debit entry to their account – Ref 1.5.1.4.
6. If they authorise the request, then create internal payment and link the receipt to generated payment. Do not process the receipt any further.

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7. If they reject the request, then cancel the receipt and pass the necessary notification back to the source of the request with the appropriate 'error' code.
8. If debit account is not quoted on the notification, then cancel the receipt and pass the necessary notification back to the source of the request with the appropriate 'error' code.

#### 5.2.1.4.1. Auto-Created Internal Payment Ref 1.5.1.5

The request to generate an internal payment from an internal preadvice should clearly show the necessary details on the request to allow the user to authorise the request and the system to generate the accounting once the payment has been correctly authorised.

The payment should be authorised with the same number of signatories as the predefined standard for the debit account, i.e. two or three as appropriate. Once authorised the request should be reacted and processed by the systems as if it was a new request submitted manually.

The authorising users should have the functionality to reject the request if they wish. Notification of the rejection should be passed back to the source of the preadvice.

The payment reference should also show that it was auto-generated as a result of the preadvice request.

#### 5.2.1.5. Value Date – Ref 1.5.1.6

The value date of the request should be checked against the current value date of the system and holiday calendar for the currency.

If the request has a value prior then the request should be flagged as back-valued if not already done so.

If the request is on a currency holiday (but not a weekend), process as value date requested (for external activity value date may have changed anyway) and hold accounting entries back from posting if *DBS will not accept postings on currency holidays*.

Request for activity on a weekend for the currency should be rejected or moved automatically to the next available value date for the currency.

The additional entries required for the back-valuation of a request will be detailed later.

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### 5.2.2. Process: Identify Correct Accounting including Intercompany Entries – Ref 1.5.1.7

With the in-house bank model in place the intention is to route payment requests between Firm entities via intercompany accounts rather than real world nostros. To prevent the growth of numerous direct intercompany positions between the paying and receiving entity, GCCM should be designed to limit the intercompany positions any entity has to a single intercompany position. This single intercompany position should that position between the entity and the Treasury entity that is responsible for funding the entity.

To accommodate this single intercompany concept GCCM may need to create multiple intercompany movements to moving funds between entities. These multiple intercompany entries should be created automatically. This section describes the process of identifying the correct accounting entries for each individual request using Funding relationship as the primary intercompany.

Note the preference will be to limit the number of Treasury entities that can act as a Funding entity to minimise the number of steps involved in moving funds. Initially it is likely that at least LBHI, LBHI UK Branch, LBAH, and LBI will be defined as Funding entities in use. Over time the intention would be to reduce the number of Funding entities to branches of LBHI or just LBHI.

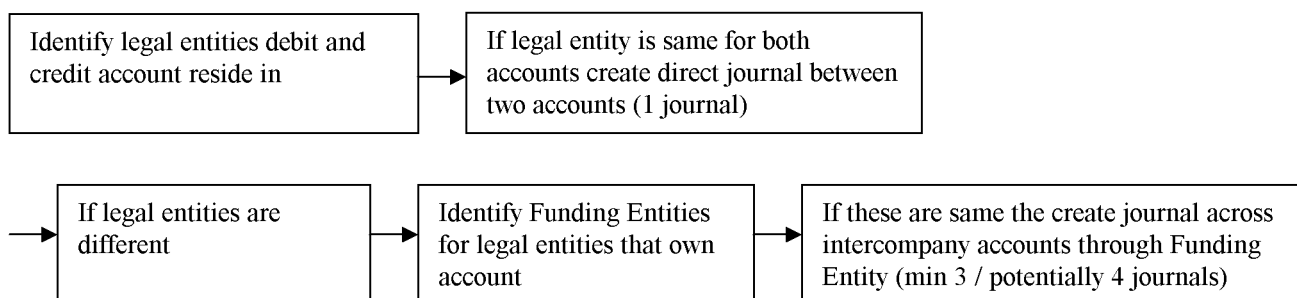
#### 5.2.2.1. How process could work

This process aims to outline the steps that should be taken to identify the set of accounting entries including intercompany records required to correctly show the movement of funds between entities and create the intercompany payable and receivable positions for the Firm's preferred funding structure.

For clarity it is worth noting that:

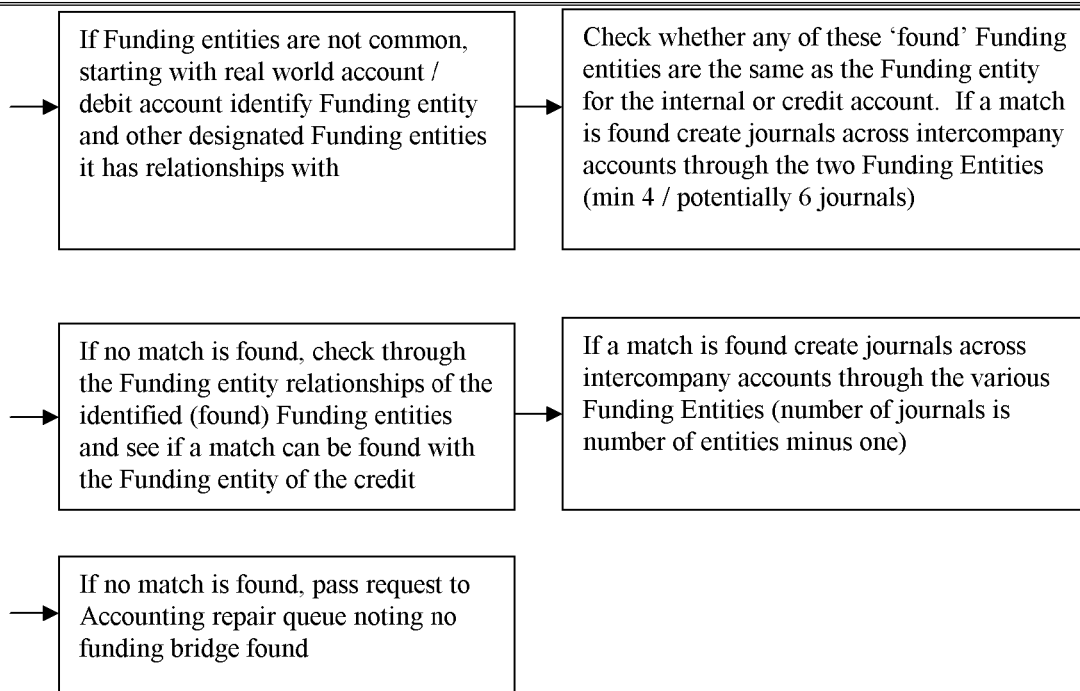
1. For Internal Payments both the Debit and Credit account will have be quoted on original request
2. For External Payments and Receipts either
  - a. both the Debit and Credit account will have be quoted on original request
  - b. or the external account number will have been assigned as part of the process of choosing of the external nostro and / or payment channel

The first step in confirming the accounting entries required involves identifying the legal entities that the two accounts quoted on the instruction belong to. These will then determine the steps that should be followed to maintain the Firm's preferred funding structure.



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This process outlined above should be successful without a significant number of steps as there are a limited number of Funding entities in existence and they will not have that many relationships between them as well. However to limit the processing time involved in finding the correct funding bridges it should be possible:

- to create a simple map of the relationships with a hierarchy table that could be used to direct the search process for the identification of the correct funding bridges.
- and / or limit the number of steps involved in the search process and pass the request to the repair queue once limit is passed noting no funding bridge was found.

Once the journal entries / funding steps have been identified the journal records should be created and the involved intercompany accounts updated.

The journals should then be created as per rules, special conditions and examples outlined in next sections. The rule set will also outline options for creating journals across intercompany accounts.

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### **5.2.3. Process Name: Create Journal including intercompany entries and cross-currency requests – Ref 1.5.1.8**

To take account information and create simple journal requirements based on identified accounts and rules outlined in Journal Rules document. Each journal should consist of the following information as a minimum:

- Debit account,
- Credit account
- Currency
- Amount
- Value Date
- Request Reference
- Unique journal reference (to be different from request reference, could be child)
- Any additional data supplied with request

Note the referencing any back valuation interest adjustment or cross-currency effect journals should be posted as separate journals but should contain same request reference id

The following sub-sections outline the accounting to be created for different scenarios identified in the preceding sections.

#### **5.2.3.1. One entity involved – no currency or back valuation effects**

The simplest scenario where debit and credit account are in same entity and the request is in the same currency as the accounts. In this case create one direct journal between the specified accounts in the GCCM D&R sub-ledger.

#### **5.2.3.2. Two entities involved – no currency or back valuation effects**

For this scenario debit and credit account are in different entities, specifically one account would be in the requesting entity and second account is in the Funding entity, and the request is in the same currency as the accounts.

In this case there would be two journals with mirrored amounts and each journal should include the intercompany accounts for the entities involved in each entity, that is

In entity A – originating account and entity A's intercompany account with Funding entity.

In Funding entity – Funding entity's intercompany account with entity A and 'beneficiary' account.

The beneficiary account would be the real world nostro if an external payment was to occur. See Appendix for internal scenario where this could apply.

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5.2.3.2.1. Example: External Payment of 100 by Treasury for Entity A

Reconciled against statement showing cash debit

Treasury Nostro		Treasury Intercompany with Entity A	
Dr	Cr	Dr	Cr
	100	100	
Entity A's Business Account with Treasury		Entity A's Intercompany with Treasury	
Dr	Cr	Dr	Cr
100			100

Reconciled against ledger credit from Ops booking for underlying activity;  
Reconciled by Ops / Firm Balancing  
Multiple business accounts may exist in entity.

**5.2.3.3. At least two entities involved – no currency or back valuation effects**

For this scenario debit and credit account are in different entities, specifically one account would be in the requesting entity and second account is not in the Funding entity, and the request is in the same currency as the accounts.

In this case there would be multiple journals with mirrored amounts and each journal should include the intercompany accounts for the entities involved in each entity, that is

In entity A – originating account and entity A's intercompany account with Funding entity and.

In Funding entity – Funding entity's intercompany account with entity A and a control account.

In Funding entity – the control account and Funding entity's intercompany account with entity B.

In entity B – entity B's intercompany account with Funding entity and beneficiary account.



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The beneficiary account would be the real world nostro if an external payment was to occur and entity B was the Paying Entity for Entity A.

5.2.3.3.1. Example: Internal Payment of 100 by Treasury for Entity A

Funding Entity	Treasury Control Account		Treasury Entity A Intercompany		Treasury Entity B Intercompany	
	Dr	Cr	Dr	Cr	Dr	Cr
	100	100	100			100
Entity A	Entity A Account with Treasury		Entity A Treasury Intercompany			
	Dr	Cr	Dr	Cr		
	100			100		
Entity B	Entity B Account with Treasury		Entity B Treasury Intercompany			
	Dr	Cr	Dr	Cr		
		100	100			

Reconciled against ledger credit / debit from Ops booking for underlying activity  
Reconciled by Ops / Firm Balancing

Entity A and B could in theory be same legal entity but different business. In this case intercompany accounts would see offsetting entries and be flat though Internal Business accounts would still show movement.

GCCM creates 'statements' for Internal Business and control accounts daily that are sent to GSSR.

See Appendix for internal scenario where this could apply.

#### 5.2.3.4. Cross Currency Request

In this scenario a user has requested a payment for a currency other than the currency defined for the debit account. Assuming this request has been properly re-authorised (discrepancy noted, a FX applied to booking and then approved) a series of additional journals will need to be created to take care of the FX.

The FX should be passed in the Funding entity rather than in the originating entity. The rate for the FX trade will either be input by a Cash Management user or will be defined in advance for a certain sub-set of

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requests (for example amounts under USD1mm may be able to use an End of Day rate or the current rate quoted on Lehman Live).

If entity A is originating entity and wants debit in currency 2 (CCY 2), entity B is Funding entity and payment is in currency 1 (CCY 1) and FX rate has been agreed

**Payment**

In entity B – debit entity B's control account and credit 'beneficiary' (nostro) account in CCY 1

**FX booking**

In entity B – debit entity B's FX exposure account and credit control account in CCY 1

In entity B – debit entity B's control account and credit entity B's FX exposure account in CCY 2 for equiv of request at defined FX rate

**Intercompany after FX**

In entity B – debit entity B's intercompany account with entity A and control account in CCY 2 for equiv of request at defined FX rate

**Intercompany true up**

In entity A – debit originating account and credit entity A's intercompany account with entity B in CCY 2 for equiv of request at defined FX rate

**5.2.3.4.1. Euro In-Currencies**

The accounting for Euro in currencies will be the same as for the general cross-currency requests detailed above but will be directed through specific conversion accounts.

**5.2.3.5. Back Valuation Request**

In this scenario a user request an entry with a prior value date. Assuming this request has been properly re-authorised (discrepancy noted and then approved) journals will need to be created to take care of the interest change and posted to the relevant accounts.

The booking for the principle is made in same way and is inserted into historical record with closest approximation to requested value date as stored in the 'live' database. The intention is to follow DBS concept of allowing items to be inserted up to five days prior to current value date.

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As before:

In entity A – originating account and entity A's intercompany account with entity B

In entity B – entity B's intercompany account with entity A and 'beneficiary' account

Interest is then calculated to true up positions as if payment had been made with the requested value.

(Note this may change the way external traffic is processed and so it may be that internal and external requests are treated differently so that the current external back valuation process can continue. The current process is that external costs are passed direct to originator's nostro for their local approval and allocation to a P&L centre. The GCCM process assumes intercompany interest makes Treasury whole for an external costs – which there would not be for internal only movements where Treasury gains from one entity and pays a second. Then intercompany interest is reallocated down to the originator nostros for review and sign-off. )

Regardless of whether the principle can be inserted into the work for the value date request or exceeds the five day cut-off, and so is inserted instead on current day less the five days, the intercompany balance for the value date of the request should be recalled and updated with the back-valued request.

The updated balance should then be used to create the interest adjustment this flows into the subsequent value day's intercompany balance which is used to create the interest adjustments for the subsequent day and so on. The calculation of intercompany interest is outlined later.

#### 5.2.3.5.1. Example of effect of back- valued request for 15

A request that increases the intercompany balance by 15 is sent with value date Today minus three days, and each of the intermediary days were valid working days.

Intercompany as of	Today - 3	Today - 2	Today -1	Today
Original bal	100.0000	150.0000	200.0000	200.0427778
Change outside interest		49.9791667	49.9683330	
Interest rate	0.0750	0.0760	0.0770	
1 days interest	0.0208333	0.0316670	0.0427778	
Back-value bal	115.0000000	165.0031250	215.0062920	215.0522794
Interest rate	0.0750	0.0760	0.0770	
1 days interest	0.0239583	0.0348340	0.0459875	
Difference in intercompany:				15.0095017
Daily difference (less principle change)	0.0031250	0.0031670	0.0032097	0.0095017

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From the above it can be seen that a journal would be created for the principle of 15 and for a total interest adjustment of 0.0095017.

Given the request was within the five day window, the journal for the principal would be passed with value date Today – 3. The interest adjustments could be passed as:

- one journal with value date today for 0.0095017
- or three journals each representing the adjustment a particular value date  
0.0031250 value Today – 3, 0.0031670 value Today – 2, 0.0032097 value Today -1.

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#### 5.2.4. Journal and Account Rules

To ensure all journals are created to a similar set of rules and that system or account breaks are limited, the following rules outline how journals should be created and accounts kept in balance. Additional rules may need to be added during detailed specification writing and once system is live, so GCCM will need to allow input of new rules without significant down time.

Some of these rules imply clean-up processes that are either automated or manual should be in place.

##### 5.2.4.1. Rules for Journals

- Journals should contain one debit account and one credit account
- Journals should not cross legal entities; that is every journal should be entity specific.
- If one account is not known or not defined, then the journal should be created against the plug account for the entity of the known account.
- Journal sets for requests that move externally must include an account defined as an external real world nostro.
- Entries should be driven from real world nostro side wherever possible.
- Accounting entries should be retained for ten years (or greater depending on longest regulatory requirement<sup>8</sup>). In addition German regulations on retention of electronic accounting records offshore (from Germany) will need to be complied with.
- For entries that cross multiple intercompany accounts (say as a result of an internal payment between two entities) GCCM D&R will need to post intercompany entries in the Funding entities between multiple intercompany accounts. To do this it could either:
  - Direct between intercompany accounts in the Funding entity(ies)
  - Via wash account in each Funding entity that must zero at the end of the day

##### 5.2.4.2. Rules for Accounts

- Intercompany accounts should be in line
  - Balancing journals should always be created, mirroring movement, even if this creates plug entry in one of the entities. (That is debit in intercompany account between A and B in entity A, would be credit in intercompany account between A and B in entity B.)

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<sup>8</sup> Note the specified ten year requirement is based on German banking regulations

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- Plug accounts should be zero. To ensure this as part of the end / start of day process there will need to be reporting on postings to plug accounts, intercompany balance differences and position reconciliation with DBS to ensure that the sub-ledger integrity is maintained.
- If intercompany balances are not to be maintained on GCCM (say instead in TWS) intercompany accounts should zero every night through wash book process.
- A clean up process for retained earnings / P&L effects on Internal Business accounts should exist (see later)
- Book to statement differences should equal outstanding / unapplied items. Any differences should be reported and investigated.

To reduce the number of differences due to the practice of agent banks deducting charges on funds paid into nostro accounts, D&R should be able to identify such amount differences and post correcting journals automatically.

This is possible on SWIFT statements (*need to check confirmations do this as well?*) where it is usually to see reference to Original Currency Amount (OCM) where charges or an FX has occurred between the debiting of the counterparties account and the receipt applied to the beneficiary's account. Amount difference charges should be identifiable when the amount credited and the OCM are in the same currency and the difference between the two numbers is limited (say USD15 equivalent).

Amount difference journals should be created simultaneously with the posting of the credit for money that has been preadvised and then matched, with the preadvised / OCM passed to the Internal Business account, the nostro debited for the amount that came in and the charges account linked to the real world account debited for the charge amount.

If funds have not been preadvised, Treasury will not absorb charge and the amount received should be passed direct to the Internal Business account.

- Annually intercompany expense / interest should be cleared wherever possible
- All accounts should be set-up to post position deltas to DBS
- All accounts should be set-up to be sent to GSSR and only accounts not to be sent to GSSR should in theory be fee and external interest income and expense accounts. Therefore default will be to send accounts to GSSR unless users selects otherwise.
- GCCM should not be creating any FX exposure except for out of currency requests. Note these will need to be hedged within Treasury and therefore there needs to be a process to provide daily currency positions to the FX hedging process to include requirements in hedged positions. Once hedging has taken place the FX positions should be cleared down.

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#### 5.2.4.3. Rules for Entities

- Entities should be authorised for currencies during set-up process.
- Creation of an entity in GCCM should cause the creation of
  - Intercompany account with Funding Entity in entity and Funding Entity
  - Intercompany interest expense and income accounts in entity and Funding Entity
  - Plug account in entity
  - Conversion account in entity

In all currencies authorised for the entity

- Adding a currency to an entity should cause the creation of
  - Currency intercompany account with Funding Entity in entity and Funding Entity
  - Currency intercompany interest expense and income accounts in entity and Funding Entity
  - Currency Plug account in entity
  - Currency Conversion account in entity

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#### **5.2.5. Process Name: Updates required after journal completed – Ref 1.5.1.9**

This section summaries the processes and entries that should be undertaken / passed per journal after the journal has been created:

##### **5.2.5.1. Update balances**

The journal creation should update the balances of the various accounts that have been touched by the request. (While requests should have been caused a balance change in a pending settlement status the balance should now be shown as confirmed.) These should be available via the web reporting tools.

##### **5.2.5.2. Update originating system**

Once the accounting has been created, the originator of the messages should be informed that this process was completed.

##### **5.2.5.3. Update Fee account**

This account will be used to recover the costs associated with the settlement of cash request by Treasury on behalf of the Firm. Once a request has been formally accounted for, it will be assumed to have been settled and at that point the fee tracking for the originating nostro should be updated for the request.

The account will not be debited; instead there should be a tracking of activity that will record the number and type of requests for an individual originating account.

Additional charges should also accrue for the processing of cancellation and amendments.

##### **5.2.5.4. Update Interest penalty account**

For requests received in GCCM D&R after the standard cut-off for a currency has been passed (i.e. a request that failed Funding Deadline) that were settled with the requested value date, the Internal Business accounts should have their linked interest penalty account debited for a fee which is based upon the size of the request.

Accounts that have an automatic exemption to the Funding Deadline check should not be charged a penalty.

The offsetting credit will go to the Funding / Paying entities late interest account. It is envisaged that the interest penalty account will role up a Treasury P&L account to offset cost of late funding.

These costs / earnings should be validated and approved before D&R posts the interest recoveries or credits. An appropriately authorised user should then be able to approve the interest recoveries or credits.



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It is likely that at least initially the actual posting of recoveries from the individual businesses may not be processed, however the functionality should still be built into system and user would simple reject recovery at this stage.

#### 5.2.5.4.1. Charge Calculation

The basic interest charge calculation is by currency and is

$(\text{Message amount} * \text{Penalty Spread} * \text{Part of Day(s)}) / (\text{Days per year for currency})$

- The default penalty spread should be a standard amount of basis points, though users should be able to override if required
- Part of Day would be the length of time the charge should be applied for. This would vary with the particular item and would be determined per item based on how long Treasury would expect to suffer a charge for the item. So for late funded items the timeframe would be to the next available value date that is yet to be funded (so next day for Euros after cut-offs) whereas items that caused the debit cap to be exceed would be charged only for part of the day.

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### **5.3. Daily Accounting Process – Ref 1.5.2 and 1.5.3**

This chapter details the account postings for DBS that will be generated within the in-house bank once a currency has closed for the day and certain of the control process required to ensure the integrity of the sub-ledger.

#### **5.3.1. Process Name: Morning reconciliation processes – Ref 1.5.2**

To maintain the integrity of GCCM as a sub-ledger, that is in line with the real-world and to ensure all the relevant journals have been passed within DBS, a series of automated reconciliation process should be developed. In particular GCCM D&R should receive and be compared with:

- A download of all external accounts from GSSR showing balances for each account and last statement dates.
- A download from DBS of balances for GCCM source code activity for all accounts that show a GCCM source code posting<sup>9</sup> or balance.

##### **5.3.1.1. GSSR Download – Ref 1.5.2.1**

To source the real world start of day balances for the accounts it hosts, GCCM D&R should receive at least one daily file of the account balances showing the last time a statement was received by GSSR. In practice it may be easier to receive files by currency to ensure accounts are updated in a timely manner (i.e. so JPY accounts on GCCM do not have to wait for USD account statements to arrive).

For each real world account in GCCM the latest balance should then be extracted and added to the records for that account within GCCM. GCCM should also store the latest statement date for each account and allow users to identify accounts where the statements are not current.

Note GSSR as currently set-up by Firm Balancing does not differentiate between Internal and External reconciliations and so:

- Cash Mgmt will either need to agree a process of flagging accounts on GSSR as internal and external as part of changes for GCCM with GSSR Technology
- or take all account balances from GSSR and extract the external accounts by comparing the balance list against a list of internal reconciliation pairs (not NWM database as yet) identifying non-real world accounts on GSSR.

Any unidentified accounts should be published to a user list for review. The CM users will then be responsible for setting up any new external accounts with the correct balance. The CM user should also be

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<sup>9</sup> Each system that posts to DBS is assigned a unique code to distinguish the source of the entries. This unique reference is called the source code. It is also understood that the system tracks the balances by source code and so it should be able to extract the balances for all GCCM activity easily.

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able to add accounts to the internal reconciliation list to be included in the review noted above and so ignored from future downloads from GSSR.

#### **5.3.1.2. DBS Download – Ref 1.5.2.2**

To ensure the internal integrity of the accounts it hosts, GCCM D&R should receive at least one daily file of the balances from DBS of accounts showing a GCCM source code entry.

For each account balances exported by DBS, the balance in DBS should be compared with the balance of the equivalent account in GCCM. Any balance discrepancies should be published to a user list for review.

Note that the process of comparing balances should allow for multiple accounts in GCCM posting / rolling up to one account in DBS, in which case the net sum of the GCCM balances should equal the DBS balance.

GCCM should check that it has no account with a balance that is not represented in DBS, unless that account has been specifically excluded from posting to DBS. Any accounts with a non-zero balance and activity on GCCM but not on DBS should be published to a user list for review.

GCCM should identify DBS accounts showing a balance created by GCCM that cannot be matched to a GCCM account. Any such accounts should be published to a user list for review.

#### **5.3.1.3. Plug and Suspense accounts – Ref 1.5.2.3**

Details should be published of all accounts in GCCM defined as plug or suspense that have a non-zero balance at the start of the business day for the currency of the account.

Note plug accounts should be cleared daily, so it would be useful to have aged analysis reporting included in the end / start of day process.

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### 5.3.2. Process Name: GCCM End of Day processes – Ref 1.5.3

Though GCCM is not to have a proper batch, certain processes will need to occur at the end of the business day as part of the transition to the next value date. The following section details the business events that need to occur; it is expected certain technology events will have to occur on a regularly / daily as well.

To allow for at least 24 by 6 (24 by 7 would be preferred as it avoids constrictions at each end from USD close Friday and reopen for Monday on Friday) processing it is suggested that at 'end of day' time is set for each currency and at the point this is reached the listed processes are undertaken for activity in the specific currency. (Currencies could be grouped or individually specified as opening 5 or 6 days.)

Note that for individual currencies the 'end of day' point will not always be midnight in the appropriate time zone, though this is a general default. Therefore the system will need to allow a user to define the end of day for a currency.

In particular the USD business day will need to end prior to midnight so that GCCM can ensure that it has the same value date as the FED, which can reopen for next day value at 9pm EST on the prior day.

These end-of-day processes should not take involve the system 'locking' or going down. Instead requests after the closing time has been reached should be processed on next available value date with back value if appropriate.

#### 5.3.2.1. Produce export for reconciliation and paper statements – Ref 1.5.3.1

To ensure that the Firm continues to operate in a controlled environment, both internal and external accounts will need to be reconciled. In particular for business lines that convert external accounts to Internal Business accounts with the in-house bank, GCCM needs to produce account history statements that can be used to reconcile trade postings against.

In order to send data to the Firm's reconciliation system and satisfy external reporting requirements, GCCM will need to be able to send data both to GSSR via electronic feed and also produce printable statements. These statements will not have to be printed daily and could be sent to an on-line storage area such as Infopac.

The statements should follow the layout of the MT940<sup>10</sup> but with additional data supplied that can either be read by GSSR or not. (It is likely that GSSR will not make use of the additional data straight away but will take it in over time.) In particular GCCM D&R should produce statement files with

- A breakdown of fields that would be concatenated for the MT940 Further information field

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<sup>10</sup> The statement format used should be the one that passes on the most information about the individual transactions as possible.

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- Any information supplied with the request from a source system

In fact GCCM should be able to create a fully formed MT940 that can be sent to Swift.

Paper statements should follow similar formatting rule but be formatted to print on standard header paper (note Lehman's default for headed paper is portrait).

5.3.2.1.1. Example of MT940

Account Number 123-456789

Statement Number 102

Opening Balance: Euro (EUR) 6,723,495 (Credit)

The details of the transactions contained in the statement are as follows:

Transaction 1	Value Date: 13-05-2003	Debit: EUR 64.23
	Transaction Type: Cheque	
	Reference for the Account Owner: 78911	
	Reference: 123464	

Then closing balance info

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#### **5.3.2.2. GCCM D&R End of Day Account Posting – Ref 1.5.3.2**

While GCCM is not expected to have a traditional batch, certain activities will need to occur as part of the transition to a new business day including posting summary activity to DBS.

The system should complete the following steps to create the daily upload to DBS:

- Calculate position deltas for each account where the delta is defined as the prior end of day versus current end of day balance.
- Record differences in a file in DBS readable format
- Back-valued amendments should be processed with the value date appropriate for the entry and written to same file.
- The entries should then be passed to DBS and a copy of the file stored on-line.
- Entries should be posted in the currency of the account in D&R not converted to USD or the functional currency of the entity.

If possible GCCM D&R should make use of the DBS Sub-ledger process that is currently in design / technical specification.

##### **5.3.2.2.1. Effect of Back Valued Requests**

For accounting purposes, whether external or internal nostro accounts, GCCM should pass to DBS restated balances or amendments to incorporate back-valued request for requests back-valued less than five day.

For requests to a date no longer live in D&R the items should be posted into DBS with the value date of the oldest live date on D&R and the subsequent balances amended.

##### **5.3.2.2.2. Example**

For example assume today is Monday August 2<sup>nd</sup> and a payment is sent for value Thursday July 29<sup>th</sup> across an External Account.

For DBS send amendment to End of Day balance for value July 29 to incorporate principal  
Send amended Start and End of Day for value July 30<sup>th</sup>  
Send amended Start of Day for value August 2<sup>nd</sup>

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### 5.3.2.3. Intercompany Interest – Ref 1.5.3.3

This section outlines how GCCM D&R would take over the intercompany recover of the cost of funding payments and receipts on behalf of the business. The process outlined will need to be discussed with the Financial Controllers, ALM and Global Carry to ensure they agree change from TWS, etc.

The cost of funding the Firm's payment activity is claimed from business by charging debit interest to entities borrowing from Treasury, that is where the intercompany position is the Treasury entity's books is a debit. In turn credit interest is paid to entities by Treasury as an incentive to have entities return funds to the holding company.

The rates at which credit and debit interest is paid are set within ALM and the default rate is the Treasury Index rate. Currently the Index rate is 1 week LIBOR flat; reset daily and there is no difference between credit and debit rates, though GCCM will need to be able to allow different indices and a spread to be added to allow for future changes.

Interest is generally charged daily so that the standard period to be used in the interest calculation will be a single day or three days at the weekend.

Though the bulk of entities will earn or pay at the default Index rate over the standard period, CM Users should be able to include an alternate index for the calculation of intercompany interest and period at the set-up of the intercompany accounts for an entity.

#### 5.3.2.3.1. Intercompany Interest Calculation

The following steps briefly outline the process to calculate and post intercompany interest on a daily basis (for background consider the process followed within TWS). If possible intercompany interest should be calculated independently for each side of the intercompany relationship and the two numbers compared before the entries are posted.

The basic interest calculation for intercompany interest recovery is by currency and is

$$(\text{Intercompany position} * \text{Agreed Intercompany Rate for Position} * \text{Day Period Count}) / (\text{Days per year for currency})$$

- Where the intercompany position is as per recorded in the GCCM
- The default for Intercompany Rates will be the Credit / Debit Index rate:
  - Index rate is as defined by ALM and is generally a set percentage above 1 week LIBOR. As percentage changes occur over time this should be user definable.
  - It would also be useful to be able to define index to be used as well to allow for future changes.
- Any other rate to be used would be manually defined and should be included in set-up for the interest expense / earnings accounts for the intercompany position

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- Note at the moment the credit and debit index rates are the same but GCCM should apply the
  - credit rate to long balances with Treasury (i.e. where the intercompany position is the Treasury entity's books is a credit)
  - debit rate to short balances with Treasury (i.e. where the intercompany position is the Treasury entity's books is a debit)
- 'Day period / count' is the number of days since interest was last calculated
  - e.g. one day mid week, three days over normal weekend, two, three or four where a bank holiday occurs mid-week or attached to a weekend
  - Have to be mindful of split month end. If last day of the month is Saturday, for example, on Friday, then have to pass to DBS 2 days' worth of interest and hold onto Sunday's interest and post to DBS along with Monday's in the new month.
- 'Days per year for currency' is the market convention for the basis for interest rate. Should be set as part of the static data set-up for the currency
  - E.g. USD would be 360 and GBP 365

#### 5.3.2.3.2. Reconfirm prior days intercompany interest

To allow for back valuation of items into the live database, intercompany interest for the past four days should be calculated alongside the current day. Each day should be taken in term, so that the effect of a change in the intercompany interest for one day can be followed through to its effect on the intercompany position for subsequent days.

Any differences between the posted interest and the recalculated interest should be posted. In this case a journal reversing the old amount should be created as well as a new posting with the new number. GCCM should retain the old number for historical purposes but use the recalculated position for future reporting.

#### 5.3.2.3.3. Post to intercompany position – Ref 1.5.3.4

Note as accounts are internalised the only way for business to pay the cost of funding is to borrow more from Treasury, therefore the recovery of interest by Treasury for funding a payment would be

- Debit i/co account in Treasury entity Credit interest earning for i/co

And to mirror this GCCM would also post

- Debit i/co expense in originating entity Credit i/co with Treasury

The effect of these entries on underlying accounts would then be posted through to DBS as part of all position changes reported to DBS



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5.3.2.3.4. Create GID posting file – Ref 1.5.3.6

To allow ALM to track Treasury P&L activity, GCCM D& R should create a daily update file for the GID / Debt Database to maintain integrity of Treasury P&L calculations. Detail of requirements should be available within Treasury Tech (position or transaction changes for intercompany accounts)

5.3.2.3.5. GCCM DBS Postings for Interest – Ref 1.5.3.5

The system should complete the following steps to create the daily interest upload to DBS:

- Calculate position deltas for each account as a result of the creating of intercompany interest journals where the delta is defined as the prior end of day (pre-interest calculation) versus the end of day balance including interest.
- Record differences in a file in DBS readable format
- Back-valued amendments should be processed with the value date appropriate for the entry and written to same file.
- The entries should then be passed to DBS and a copy of the file stored on-line.

This process could be merged with the general upload of data to DBS referenced above.

5.3.2.3.6. Effect of Split Month End

How to handle the impact caused by month end falling on a non-working day: **The following needs to be checked out with Financial Controllers.**

Essentially activity that relates to a month should be contained within the month, so where interest accruals would cross a month end, GCCM should process the interest up to the month and post this. Then as a separate entry process the interest from the start of the month up to the next value date.

The basic interest calculation for intercompany interest recovery is by currency and is

- $(\text{Intercompany position} * \text{Agreed Intercompany Rate for Position} * \text{Day count}) / (\text{Days per year for currency})$
- 'Day period / count' is the number of days since interest was last calculated
  - e.g. one day mid week, three days over normal weekend, two, three or four where a bank holiday occurs mid-week or attached to a weekend

Where month end falls on a working day this is simply the difference between the month end and the prior working day.

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For split month ends

The interest calculation has to be split as interest:

- up to the month end with the day count equal to the difference between the month end and the prior working day
- from the start of the month with the day count equal to the difference between the start of the month and the next working day

This may best be showed by an example:

This year Feb 04 was a split month end and so interest over weekend 27th Feb to 1<sup>st</sup> March would have been split as:

27<sup>th</sup> Feb to 29th Feb so day count is calculated as the difference between these dates

29<sup>th</sup> Feb to 1<sup>st</sup> March so day count is calculated as the difference between these dates

#### 5.3.2.3.7. Effect of Back Valued Requests

For accounting purposes, whether external or internal nostro accounts, GCCM will pass to DBS amendments to reflect the cumulative intercompany interest with the current day interest posting provided that it doesn't cross month/year.

If the back-valuation request crosses month or year end, then the intercompany interest recovery should be split and reported accordingly.

#### 5.3.2.3.8. Example

For example as before with reporting, assume today is Monday August 2, a payment came for back value to Thursday July 29 across an External Account.

For DBS send interest amendment for the three days' interest with value date of July 31 (29<sup>th</sup>, 30<sup>th</sup> and 31<sup>st</sup>) and send a second amendment for one day's interest (1<sup>st</sup>) with value date of today.

The effect of the recovery of the intercompany interest for the second should form part of the overall recovery for today.

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**5.3.2.4. GCCM D&R DBS Account Posting Reconciliation – Ref 1.5.3.8**

Once the activity file(s) showing changes in account positions have been sent to DBS for posting to the GL accounts, it is expected that DBS will acknowledge receipt of the file and also the successful or not posting of the various journals back to GCCM D&R.

D&R should take in these acknowledgements and reconcile the postings against the file of entries it has stored. Any discrepancies or failed postings should be reported to the users.

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#### 5.3.2.5. Core Static Updates

The system should update the following system settings and core static:

- Value date – this will be currency specific and it is possible that multiple value dates will co-exist within the system as today's date.
- Currency LIBOR rates (or Index rates)
- Escalation limits
- External Account information - details from NWM database of any new account openings or account closing. The records should be compared with external accounts set-up and changes flagged.
- Signatories' information - details from signatories database of any cancellations of authority for authorised signatory. The records should be compared with GCCM users and matches flagged.
- BIC and ABA Numbers files – daily refresh of tables stored in GCCM for validation purposes versus central source and updated versions loaded (Note sources maybe either internal BIC or external).
- Offline storage – should be updated with 'printed' statements (e.g. Infopac); copies of data sent to Frankfurt; back-up of records for BCP

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#### **5.4. *Month End Accounting processes – Ref 1.5.4***

Like the end of day process this section only defines business processes and does not touch upon IT driven processes that may need to be undertaken, though it is expected that some generic clean-up processes would be run including the archiving off-line of significantly older (for example greater than 24 months) data.

In particular it outlines processes to recovery payment charges (if this has not been done on a booking by booking process) and interest from the underlying Internal Business Accounts.

Note that these particular functions will need to be built into GCCM though they may not be switched on when GCCM goes live as the process is a departure from the current set-up. Therefore they will need to be agreed by all parties and this may be easier to do once all OTG systems are feeding GCCM.

##### **5.4.1. Create Month End statements for accounts**

As part of the month end processes once the month has closed (including for back valued items and in line with DBS) then a statement of activity should be generated for all accounts and sent to Infopac for record keeping.

In addition for specific accounts GCCM should be able to generate a month end statement showing all activity that can be sent out as a self contained record in a printable format.

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#### **5.4.2. Recovery Fees for D&R activity – Ref 1.5.4.1**

As part of GCCM's tracking of activity it will be recording the number and type of requests for an individual originating account. This record can then be used to calculate a cost for that activity to be passed to the individual business account to recover the expenses incurred for settling the individual requests.

Depending on the quality of the messages that have been sent to GCCM D&R, the business account should be debited with a combined cost for its STP and non-STP messages. The cost should be calculated as the sum of:

- the standard charge for a STP processed message times the number of such messages,
- the standard charge for internal processed messages times the number of such messages,
- the repair charge for a message that had failed one of the validation checks other than Funding Deadline check times the number of such messages.

These costs should only be posted if the flag at the Business Level allows D&R to posts the recoveries.

It is likely that at least initially the actual posting of recoveries from the individual businesses may not be processed, however the functionality should still be built into system and the flag to charge would simply be set to No recovery at this stage.

If the function is up and running, D&R should then create a series of journals to debit the individual Internal Business accounts.

The credit offsetting the above debit will go to the intercompany account with Funding / Paying entity that settled the messages on behalf of the originating business account. In turn a debit will be passed to the offsetting intercompany account and a credit to the Funding / Paying entity's fee recovery account. It is envisaged that the fee recovery accounts will roll up to a Treasury P&L linked to the agent bank fee line.

As with all entries, their effect should be passed to DBS and be included in the daily and monthly reporting.

#### **5.4.2.1. Report Fees – Ref 1.5.4.2**

Regardless of whether the authorised user rejects the recovery, D&R should still generate a report to be attached to the underlying Internal Business account that details what was or would have been charged. The report should detail the amounts to be reclaimed and the net effect showing the split between STP and non-STP messages.

If possible the report should separately detail the reasons why messages were classed as non-STP and the repair, so that the Operations settlement teams can improve their STP rates and reduce their costs.

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#### **5.4.3. Recovery Funding Expense for D&R activity – Ref 1.5.4.3**

To potentially bring further clarity to the Carry process, it is envisaged that GCCM D&R should include a process to recovery interest expense / allocate interest earnings within each of the non-Treasury entities on GCCM to the individual originating business accounts.

For this to work the interest recovery calculations described for the daily process for the intercompany account should be undertaken on each of the originating business and external accounts generating a Funding requirement (this would include Internal Business and Real World accounts) in the entity for the entire month's end of day balances. The net total of credit / debit interest for the balances on the account would then be the amount to be recovered / credited to the individual account.

Note for credit interest need to understand if GCCM D&R should be calculating withholding tax at all.

These costs should only be posted if the flag at the Business Level allows D&R to posts the recoveries.

It is likely that at least initially the actual posting of recoveries from the individual businesses may not be processed, however the functionality should still be built into system and the flag to charge would simply be set to No recovery at this stage.

If the function is up and running, D&R should then create a series of journals to debit or credit the individual Internal Business accounts with offsetting entries passed to the entity's intercompany interest fee or earnings accounts as appropriate.

As with all entries, their effect should be passed to DBS and be included in the daily and monthly reporting.

#### **5.4.3.1. Validate versus Daily Recovery from the Entity – Ref 1.5.4.4**

To ensure that Treasury is recovering the required amounts from the various businesses, after the recoveries for the Internal Business and other accounts in an entity have been calculated GCCM D&R should report the net recovery by account, the total across the accounts, the amount recovered through the month from the entity and the over or under recovery from the originating accounts. This report should be available for review by entity or across all entities.

Note that while credit and debit interest rates are equal, it should be that the net activity for all originating accounts in an entity should equal the amount recovered from the entity by Treasury.

#### **5.4.3.2. Report Recovery – Ref 1.5.4.5**

Regardless of whether the authorised user rejects the interest recovery or credit postings, D&R should still generate a report to be attached to the underlying Internal Business account that details what was or would have been charged. The report should detail the amounts to be reclaimed and the net effect showing the split between credit and debit interest for each of the day's balance.

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## 6. Other and Future Considerations including Ref 1.6

This chapter details a number of more general developments required as part of the build and areas for consideration for the implementation of D&R.

### 6.1. Glossary of Specific Terms

#### 6.1.1. Start and End of Day

Due to the international nature of the cash market and the Firm the start and end of day for a currency may not tie in with the formal close of the Firm's book and records for a particular value date. Therefore it is proposed that:

Currency or settlement start and end of day should refer to opening and closing of the main clearing system for the particular currency; for example the FedWire opening and closing times for USDs.

That is the default value date of the system should match that in operation for the currency clearing system. So JPY could be value tomorrow while USD was still today.

The system should also recognise a processing start and end of day for a currency for a particular value date that could be longer than the external opening; during this extended period messages could be received and internal requests settled.

The actual System start and end of day would parallel the opening and closing of a value date on DBS.

In summary:

- System date and time – tied to DBS and date will roll forward when DBS changes
- Currency value date – the value date for the currency in its major market
  - Closing times will be set to allow external activity to be processed and internal settlements to continue for a period after the market closes
  - Once the DBS postings have been generated the currency value date should roll forward. This may be independent of the system date move.
- Local time should refer should to adjusted time for the local user.

In addition there will exist:

- Funding deadlines – set and checked as part of STP engine; this will determine whether instruction can be effectively funded by Treasury
- Account specific deadlines – which will override the currency processing deadlines and restrict the time period instructions can be sent to the agent for the particular account.
- Note for both funding and account specific deadlines the restriction may not be for the current value date but may actually indicate value days forward as well.



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#### **6.1.1.1. Example**

For a example a local Japanese based user could send a USD payment to D&R at 8am local time with value date 14th September, that could be released externally from 10:30 local time though it is 13<sup>th</sup> September at 21:30 on DBS / D&R in New York and US (West coast) users or sources may still be requesting book to books / internal requests for value date 13th.

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### 6.1.2. GCCM D&R State Terms

Term	Definition.
Rejected (Following Action System Reject)	Applied to messages that have been sent to the sent to the Gateway function so poorly formatted that it would be impossible to create a record from the data sent.
Requires Repair (Following Action Send to Repair)	Applied to messages that have been sent to D&R or manually input with sufficient data to create a record from the data but with some aspect that fails a user or STP engine requirement.

### 6.1.3. GCCM D&R Terminology

Term	Definition.
Business Account	Accounts used by business for ledger postings (i.e. ledger); could actually represent Control / Dummy nostro account or real world account
Internal Business Account	Business Account that has no real world equivalent; i.e. a Control / Dummy nostro account

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## **6.2. GMC – Generic Messaging Component**

Strategically the Firm has decided to create a series of generic application and messages processing interfaces, to be referred to as the Generic Messaging Component (GMC), between its various system layers to minimise the disruption of a change in either an internal system or external messaging format.

The process of creating the GMC has begun with the implementation of a SwiftNet compliant platform for messaging with Swift that will be used to retire MERVA. Over time it is expected that additional external communication processes / channels will migrate onto the GMC, with the GMC accepting standard formatted messages that will be translated into the appropriate format for the external processes or channel.

Eventually the GMC will be used to create standard interfaces between the Firm's trading and settlement systems to allow these to be upgraded independently of each other.

As a result GCCM will be expected to communicate directly with GMC for SWIFT messaging as part of its Phase One implementation.

Moreover GMC offers the opportunity to expand the interfaces available to GCCM more readily by leveraging the translation engines imbedded in GMC to allow GCCM to create standard Swift formatted cash messages that are transformed within GMC to alternative formats including batch files.

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**6.3. *Month end integrity 1.6.1***

AS D&R is acting as a sub-ledger for cash activity, it is assumed that it will need to be validated against external and DBS records as part of the month-end processes undertaken within Finance.

At the current time it is not clear how significant this process will be and whether the daily reconciliations cover the requirements. To be discussed with Financial Controllers.

The system should also run through a number of checks to clear memory caches, etc. to ensure the system maintains peak performance.

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#### **6.4. Archiving – Ref 1.6.2**

D&R should retain 25 months worth of data on-line in its historical database. As part of the month end integrity processes, D&R should clear out and archive a month's worth of data to maintain a rolling database of 25 months.

The archived data should be securely stored in line with Firm and Regulator requirements for accounting records.

In addition for the month that is archived a summary of the traffic that has passed through the system should be created and stored in a distinct database available to a limited number of users. This distinct database should grow as data is added and act as an on-line repository for all of the messages that have passed through GCCM D&R.

The users should be able to query / search for payment, receipt and account data in this separate database and users should be able to copy data from the database to circulate search results to a wider audience.

Copies of all data including back-ups and archives should be retained for at least a period that complies with the most stringent requirements imposed on the Firm globally from a regulatory body. Currently this is believed to be ten years for Germany.

##### **6.4.1. Frankfurt Archive**

A copy of the month archive should be passed to Frankfurt once the monthly archive process is complete to ensure compliance with BAFIN regulations.

This is in addition to supplying a copy of all live data records (live and on-line history) to a back-up server in Frankfurt.

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**6.5. *Retained Earnings and Automated clearing of accounts – Ref 1.6.3***

To ensure that the Internal Business accounts hosted by the system do not accrue large unexplainable balances due to the cumulative effect of historic activity, there will need to be a process to clear down the internal accounts in D&R and the offsetting accounts in the Settlement Sub-ledgers. The process can be thought of as a semi-automated retained earnings process, which would clear certain balance sheet / P&L accounts to a pre-defined set of retained earnings / P&L accounts by entity as part of year end closing.

For each Internal Business account the balance on GCCM D&R should be compared with the balance of the Settlement system that has the offsetting entries for the payment activity. After allowing for any cash reconciliation breaks due to cash activity either not in D&R or not in the Settlement system, the balance should be cleared to a conversion / retained earnings account in both systems, leaving both accounts with a zero balance except for the reconciliation breaks.

Across an entity in D&R the process is essentially a series of internal payments to / from the retained earnings account for the entity to the short / long accounts that have balances that need to be cleared. The effect of the resultant entries should be posted to DBS as part of the normal overnight postings. Even if the above process is not fully automatic, any automation may help in later years as the number of Internal Business accounts on GCCM D&R increases.

The process should run at year-end and each time will need to be discussed with the Financial Controllers to ensure corresponding entries are passed in the Settlement systems simultaneously. In fact it should be possible for the Settlement system to generate the requests for these internal payments and to send them to D&R.

A similar clear up process should be followed within the Treasury entities for the interest accounts (internal intercompany and external) and fee accounts on an annual basis.

Note GCCM will need to be flexible enough to run the process at various times for specified entities, to allow for different year ends, and even on a limited number of accounts within an entity, to allow for co-ordination with the Controllers and Settlement systems. Accounts that need to go through the process will need to be identified as they are set up (defaults may exist but we will need to think what these are in advance).

As part of the review of process it would be worthwhile investigating how the ITS retained earnings process works for comparison with the below.

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## 6.6. Recovery Requirements

All applications in the Lehman business environment are assigned a tier rating for purposes of business continuity. The most critical business tier rating of 1 is reserved for applications which perform any of the following mission critical business functions: funding, clearing and settlement, position management, risk management, and order management (only to the extent of processing existing orders, not to accept new ones)<sup>11</sup>. These are the functions required to close out a business day in the event of incident to keep the Firm afloat without any reputation loss.

Because of its participation in the funding process, GCCM is considered at the least a Tier 1 application.

The characteristics of a Tier 1 application are as follows:

- Must be recoverable to an alternate data center and be rendered operational in 4 hours or less
- “Operational” means that the critical business functions are available, not necessarily that all application functions are restored to the exact SLA as in normal production mode
- All data must be recovered to point of failure
- Other recoverability criteria must also be met:
  - Production code must be stored in a central source code repository
  - Production jobs must be run out of a central scheduler
  - Data must be mirrored in a data center other than where the primary production instance resides
  - Application must have a TAP failover script created and must undergo TAP failover prior to rollout and retesting every 6 months
  - The application must be registered in ADb with a DR instance representing the failover scenario for each production instance

### 6.6.1. Scenario Specific Recovery timeframes

However the requirement of 4 hours should be seen as extreme and instead the system should be designed:

- for instant fail over for a number of scenarios
- under 1 hour recovery for most other scenarios

Specifically the following scenarios should be covered

#### 6.6.1.1. No evacuation of building

- Limited problems, specifically issues with user access servers - instant failover
- Middleware issues - instant failover
- Application as opposed to server hardware issues - within 30 mins; no more than 1 hour with no loss of data

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<sup>11</sup> Any questions relating to application recovery requirements or exceptions should be directed to the Business Continuity Management team (BCM)

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- Primary machine failure - secondary server on line with minimal disruption in no more than 1 hour with no loss of data

#### **6.6.1.2. Evacuation of building but data centre not effected**

- Reconnect directly from back-up location or other CCM site can take up processing

#### **6.6.1.3. Data centre in region effected**

- No more than 1 hour alternate data centre (in separate region) can take up processing
- Frankfurt copy of database & application acts as tertiary back-up for complete rebuild - potential loss of activity from day.



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## **6.7. *Business Rule Control***

A number of the controls and choices implicit in the functioning of GCCM D&R are dependent on a number of business rules that are used to determine defaults and overrides for messaging. These rules will be key controls and as such will require a process to manage their change and implementation to prevent ad-hoc changes disrupting flows through the system.

The process of rule change should include a proposal stage, user acceptance testing to ensure changes satisfy requirements, verifiable regression testing to ensure changes do not effect existing rule-set unintentionally and audited implantation.

Moreover this change process should be available to a control group of users rather than being a Technology driven process; i.e. users can set-up and test without significant technology resource.

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## **6.8. *Regional Specific Issues***

### **6.8.1. Frankfurt**

#### **6.8.1.1. BAFin Cross-Border electronic Processing**

GCCM should be developed to comply with the Germany Banking Regulators, BAFin, Pronouncement of October 16, 1992 on the Employment of Cross-Border Electronic Data Processing Facilities for Bank Accounting Purposes that details the requirements for German banks to operate on systems hosted outside of Germany. The pronouncement details 17 rules that should be complied with.

Of key consideration is the twenty four rule, which is understood can be complied with by sending a copy of the database to Frankfurt each night. This remote server can also act as a tertiary back-up service for the system, should both primary and back-up servers fail.

A copy of the rules is available on request.

#### **6.8.1.2. AWV Reporting**

Once GCCM D&R is live it should be possible to migrate the current AWV reporting into the D&R reporting suite on the assumption that D&R should be responsible for all such activity.

The AWV reporting is understood to be the requirement to report all cash payments above a certain threshold from or on behalf of a German bank or institution to a non German resident institution or individual.

The report is currently collated from manually from multiple sources

A copy of the requirement is available on request.

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### **6.8.2. Tokyo**

To create a straight through processing environment based around Swift standards and western characters rather than the use of stand alone applications in kanji, Tokyo Treasury have been migrating their JPY nostro accounts to support Swift Zengi formatting.

The translation process necessary to send Swift messages under the Zengi set-up should be built into the definition of the nostro accounts and message creation.

Specific definitions are available from Tokyo Treasury and Treasury Technology.

#### **6.8.2.1. Japanese Domestic Payments**

Currently Japanese domestic payments are made by Tokyo Cash Management through a variety of agent bank supplied proprietary links that support kanji characters.

Though Tokyo Cash Management are migrating certain of these accounts to Swift Zengi and so the accounts can be managed using the Firm's existing SWIFT infrastructure and Roman characters, it is expected that a number of accounts will not migrate.

Instead as part of the development of GCCM D&R, at least one payment channel that supports kanji characters will have to be integrated with the basic platform. At the moment it is not clear if any of the kanji based systems can translate a roman character based payment into the required format for release to the agent bank or whether D&R itself would have to undertake this translation.

Further analysis will be required to understand the functionality of the existing proprietary links and any alternate payment engines available for Japan.

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### **6.8.3. New York**

As common with other US institutions, New York has a high volume of cheque processing and it would be worthwhile to centralise this processing via D&R.

It is probably that additional information may be required for cheques, such as recipients address that it maybe worthwhile adding into the definition for individual payment requests from the initiation of the project even while the cheque writing software to be used is to be determined.

One option to be considered is the outsourcing of the cheque issuance and dispatching to a third party where GCCM D&R is just required to deliver a file of the relevant details to the third party. In this case GCCM D&R may be able to use the batch writing process to create a file that is transmitted electronically without having to define an additional specific payment channel for cheques.

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## **6.9. Upgrades**

The development of D&R has been limited at this stage to key functionality though already a number of further requirements have been identified. This sections summaries these so that the system can be built to allow for them and further work into the detailed requirements for each will be undertaken during the technical and build phases of D&R.

### **6.9.1. General**

The system should be hosted so that capacity for the system can cope with a significant increase in activity for a limited time (as short as one day) and be easily increased without creating an expense bottle neck and. In particular there should be the ability to expand system resource without having to go through a process of gaining approval for a new server / box each time.

Therefore as part of the technical specification, it will be worthwhile considering how to build the system so that new resources can be assigned to the processing application and database from a server farm on a real-time basis.

### **6.9.2. Upgrades for Payment STP Engine**

#### **6.9.2.1. Formatting**

The current simple payment formatting checks to be replaced by more sophisticated checks that will allow for regional, country and even agent bank specific requirements for STP messaging

- Incorporate CCM input funding requirements into the deadline checking process as a second level of funding deadlines
- Validation of key local clearing codes
  - Sort codes
  - Fed wire codes
  - BLZ codes
- Ensuring market developments or practise that effect STP can be incorporated: For example
  - Non Swiss domiciled members of CHF clearing system
  - Local clearing of USD in Hong Kong
  - Euro clearing via UK
  - Internal transfers within one bank / branch
- Beneficiary account field - ability to add to current list of restricted strings - For example Claims Tracking enter a full stop in this field when they have no account number to quote.

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6.9.2.1.1. Agent specific formatting

Certain of the Firm's nostro Agents impose their own STP requirements that exceed the basic SWIFT requirements for payments sent to them. The following section shows summary requirements for Deutsche Bank who are LBHI UK Branch's current Euro agent.

6.9.2.1.1.1. Deutsche's STP requirements for MT2xx and MT103 payments

Hereafter please find the description of Deutsche Bank Germany's straightthrough-processing requirements in detail. Payment instructions not meeting these STP requirements are considered as repair items.

MT103 (customer payments)

A S.W.I.F.T. MT100/103 payment order is considered as "straight-through" if the below criteria are fulfilled:

- Bank fields 52, 54, 55, 56 should only be present in S.W.I.F.T.-option "A";
- Whilst we prefer to receive field 57 in S.W.I.F.T.-option "A", we still accept field 57 in S.W.I.F.T.-option "D" without counting a repair if a correctly formatted national clearing system identifier and code is used (as far as they are quoted in the S.W.I.F.T. standard field definitions);
- Other than field 57, S.W.I.F.T.-option "D" should not be used in any fields (including field 53);
- Field 72 and Field 23E should not be used. Codewords for a special service bilaterally agreed with Deutsche Bank will however not be counted as repair;
- Mandatory fields are used in line with S.W.I.F.T. guidelines. Example: Field 57a is mandatory if different from the receiver, even if field 59 contains an IBAN.

MT20x (bank-to-bank payments)

A S.W.I.F.T. MT20x payment order is considered as "straight-through" if the below criteria are fulfilled:

- Bank fields 52, 54, 56, 57 and 58 should only be present in S.W.I.F.T. option "A";
- Field 53 is blank.
  - Only if the sender maintains more than one account with Deutsche Bank Frankfurt in the same denomination, or instructs Deutsche Bank Frankfurt to debit an account of another bank (for which an authorisation of this bank is needed), he should use field 53 and will need to state the number of the account to be debited in S.W.I.F.T.-option "A" or "B".  
Example: F53: /account number S.W.I.F.T. BIC
- Field 72 should not be used.
  - The codewords "/BNF/" (information for the beneficiary), "/OCMT/" and bilaterally agreed codewords (e.g. "/CLSTIME/") will however not be counted as repair.

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#### **6.9.2.2. Payment Channels**

The creation of links to additional payment channels including

- Cheque writing link
- Fed Wire link via LB Bank for self-clearing of USD payments
- ABK link or internalise Bankhaus connectivity for self-clearing of Euro payments
- ACH links for US and UK

#### **6.9.2.3. Intraday**

Better intra day management with links to the daylight overdraft process (to be developed separately) and back to an enhanced automated funding and release process

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## **6.10. Potential Impact of GCCM D&R on Other Groups**

Rather than try and detail the impact of GCCM D&R on every area, the following lists outline items that should be addressed as part of the review of GCCM D&R with the named groups.

### **6.10.1. Operations & OTG**

- Ability to fundamental re-organise inefficient flows.
  - No longer routing traffic through FPS and other system bridges
  - Separating entities - taking LBSF & LBCC out of LBI accounts, LBF out of LBIE dummy nostros
  - Centralising and automating account funding
  - Creation of debit cap monitoring for unsecured 'free' cash intraday positions
  - Accounts hosted on GCCM - supply of data
  - Increased 'cash' settlement of securities trades / limiting direct journals between accounts to control intercompany positions
  - Internalising of flows (MTS to TMS payments) and moving away from intersystem bridge accounts
- Boundaries of Ops and CCM
  - Repair handling; who will be responsible for STP repairs
  - Manual and system payment input and responsibilities;
- IT work
  - FPS and other system retirement
  - Impact of GMC / MINT and any other major OTG IT plans
  - Resourcing of OTG work; GCCM to be classed as Firm mandatory event
- Reconciliation
  - Internalising of accounts; closing external accounts but instead unlimited internal accounts
  - Claiming of funds; less accounts more concentration and automating process to apply funds
  - Moving accounting entries from ITS in Europe / Asia
- Opportunity to develop new functionality - ability to pass more detailed information on payment / incoming funds through to clients
- SEI - Bond STP reorganisation



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**6.10.2. Finance Accounting / Regulatory / Carry**

- Internalising of accounts how does this impact each of these groups:
  - Unregulated entities
  - Regulated entities US, Europe, Asia
  - Real world cash flow requirements
- Intercompany position monitoring in real time, how can this be leveraged?
  - Could force increased 'cash' settlement of securities trades / limiting direct journals between accounts to control intercompany positions
  - Internalising of flows (MTS to TMS payments) and moving away from intersystem bridge accounts
- Carry charging and recover through GCCM; complete change to current model, would it be better?
- Management of accounting processes in GCCM; who is responsible for the sub-ledger integrity as it is multi-entity
- Moving accounting entries from ITS in Europe / Asia; how does this effect Product Control

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## 7. Legal, Compliance, and Regulatory Issues

Ref	Description	Priority
6.1	The back-up tapes should be stored and retained for at least ten years or what ever the current recommendation is for financial records issued by Internal Audit. (Ten years meets German regulations.)	M
6.2	Access to each entity should be restricted at the user level.	H
6.3	Message transfer (including screen input to database activity) should be encrypted	H
6.4	Compliance with German regulations on the use of non German hosted systems	H
6.5	Individual requests to be further encrypted to prevent identification of beneficiary; particularly required if payroll activity is migrated onto system	H

## 8. Assumptions, Risks, and Dependencies

## 9. Performance Requirements

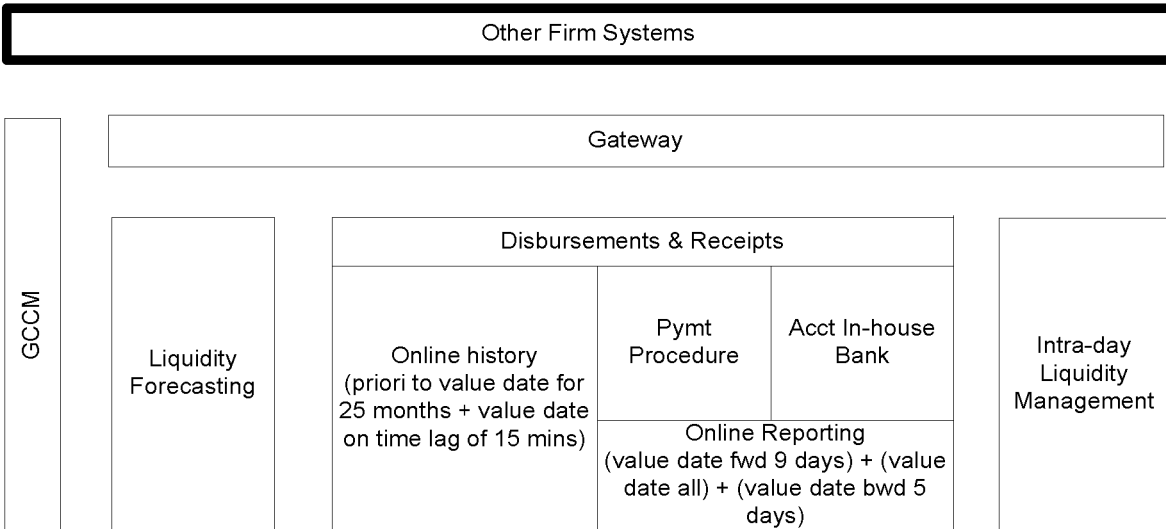
Ref	Description	Priority
8.1	Operating 24 by 7	M
8.2	Operating 24 by 6	H
8.3	No noticeable system screen latency in Tokyo, Frankfurt, London and New York	H
8.4	200,000 external movements per day	H
8.5	500,000 internal movements per day	M
8.6	Database replication to a DR served based in Frankfurt should occur nightly	H

- Performance issues, slow down in processing times - additional capacity available to be brought on stream by tech within 30 mins

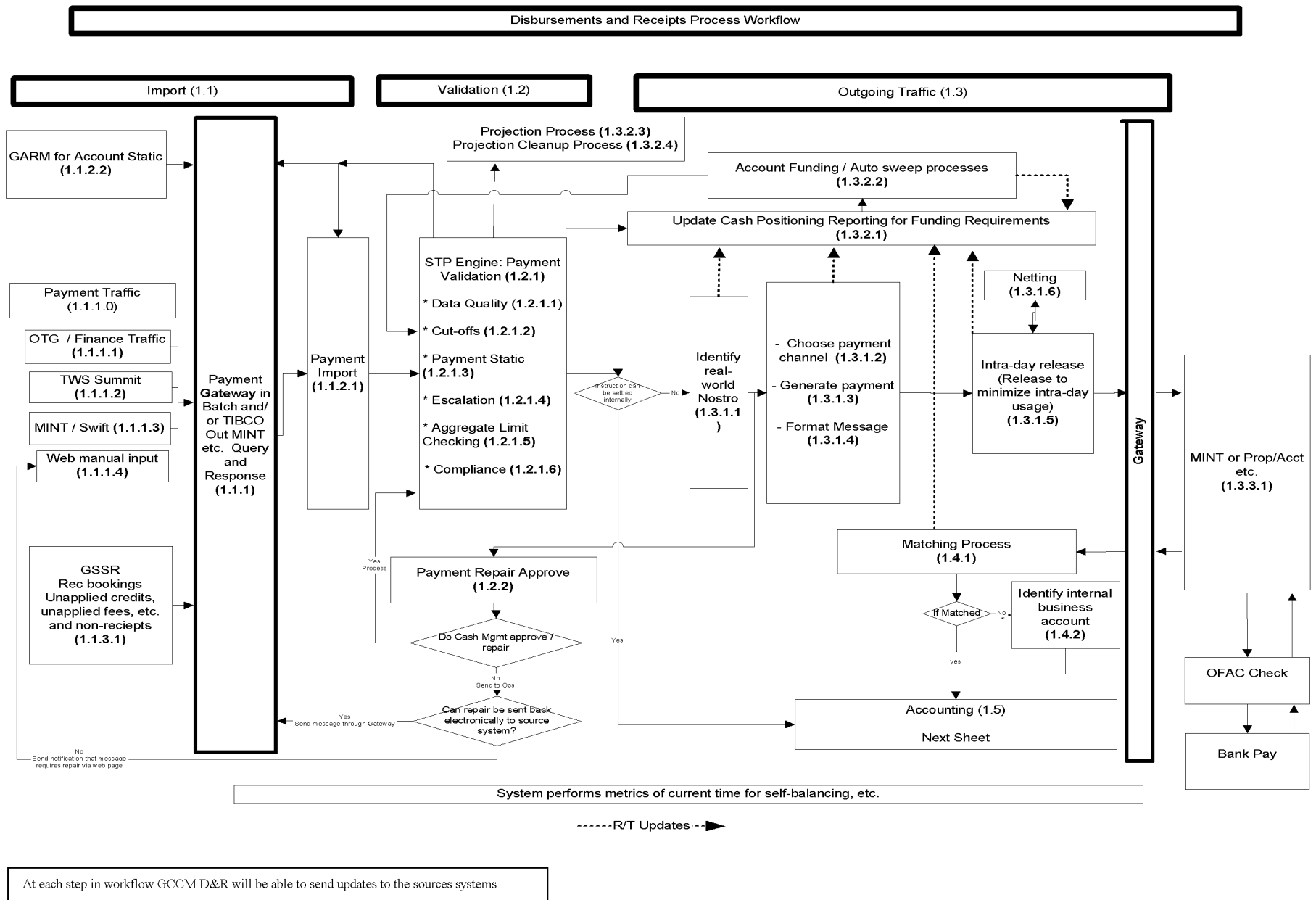
10. Appendices

10.1. Workflow model for GCCM.

10.1.1. Overview of GCCM



### 10.1.2. Diagram of Payment Engine



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**10.1.2.1. Initial Suggested Statuses for Payment Engine**

As a payment/receipt request is processed by GCCM, the status of the item at every stage will be transmitted back to the originating source system or the individual. The following details the validations and the status at each stage from input to the release of the payment.

WEB Based	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
Manual Input	Save as 'Provisional Status'	Account	Pass			Provisional	
			Fail			Repair Required	
		CCY	Pass				
			Fail			Repair Required	
	Save as 'Input Complete'			Start looking for GARM and lookup SSI		Assign SSIs	
		Garm Id field not blank and validate	Pass			Pending Approval	
		Garm Id is blank	Fail			Assign SSIs	
	Cancel					Pending Cancellation	
	Cancel (Approved)					Cancelled	
	Repair					Provisional	
Approval stage	Save as '1 <sup>st</sup> Stage Approval Status					1 <sup>st</sup> Stage Approved	
	Repair					Provisional	
	Cancel					Pending Cancellation	
	Cancel (Approved)					Cancelled	
	Save as '2nd Stage Approval Status					2nd Stage Approved	
	Repair					Provisional	

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WEB Based	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
							fix request
	Cancel					Pending Cancellation	
	Cancel(Approved)					Cancelled	
	Save as '3rd Stage Approval Status			Auto Move to GATEWAY		3rd Stage Approved	
	Repair					Provisional	Originator has to fix request
	Cancel					Pending Cancellation	
	Cancel(Approved)					Cancelled	
Gateway		Required data elements	Pass	Send to Import			
			Fail	Send error message back to originating system or originator of request			
		Optional data elements	Pass	Send to Import			
Import		Simple Check	Pass	Generate unique ref and send status back to originator		Pending Processing	
			Fail	Generate unique ref and Send Error Message back to originator		Pending Amendment	Fix and send back with unique ref
		Complex Check	Pass	Generate unique ref and send status back to originator		Pending Processing	
			Fail	Generate unique ref and Send Error Message back to originator		Pending Amendment	Fix and send back with unique ref
<b>Validation</b>							
Data Integrity		1. Invalid Beneficiary 2. Invalid GARM id or no SSI's	Pass (NO)	Continue with remaining validation checks	Pass Data Integrity	<i>No Need to Publish</i>	

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WEB Based	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
		3. Invalid CCY calendar for CCY 4. Invalid CCY 5. Amount is zero	Fail (YES)	Send error back to originator of request or originating system with unique id	Fail Data Integrity	Pending Amendment	Originator to fix and send back
Payment Quality Check		1. Invalid BIC codes 2. If BIC not present, check for valid clearing codes 3. If 'account with bank' is blank or not Swift code??	Pass (NO)	Continue with remaining validation checks	Pass Payment Quality	<i>No Need to Publish</i>	
			Fail (YES)	Send error back to originator of request or originating system with unique id	Fail Payment Quality	Pending Amendment	Originator to fix and send back
Escalation (Approval at account level or business line still has to be determined)		Request - Internal	Pass/ Fail	Continue with remaining validation checks	Pass Escalation	<i>No Need to Publish</i>	
		Request - External at account level	Pass	Continue with remaining validation checks	Pass Escalation	<i>No Need to Publish</i>	
			Fail	Suspend all payments and postings	Fail Escalation	Pending CCM approval	CCM Approval Required
					Pass Escalation	<i>No Need to Publish</i>	CCM Approved
		Request - External at Business Line Level	Pass	Continue with remaining validation checks	Pass Escalation	<i>No Need to Publish</i>	
			Fail	Suspend all payments and postings	Fail Escalation	Pending CCM approval	CCM Approval Required
					Pass Escalation	<i>No Need to Publish</i>	CCM Approved
Compliance Checking		1. Is it a restricted country 2. Is currency restricted 3. Is institution a casino or money exchange 4. Is travel rule complete 5. Others (to be enumerated elsewhere)	Pass (NO)	Continue with remaining validation checks	Pass Compliance	<i>No Need to Publish</i>	
			Fail (Yes)	Suspend all payments and postings		Pending CCM/CAD Approval	CAD Approval  CCM Approval

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WEB Based	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
					Pass Compliance	<i>No Need to Publish</i>	CAD/CCM Approved
Funding Deadline		By currency validate receipt time of request to the cut-off time table; check if business account is on the override cut-off	Pass	Go check value date Continue checking other validations	Pass Funding cut- off	<i>No Need to Publish</i>	
			Fail	Send errors back to originator of request or originating system	Fail funding cut-off	Past cut-off time	
		Check value date and if it is Back-value	Pass (NO)		Pass Funding cut- off	<i>No Need to Publish</i>	
			Fail (YES)	Send notice back requesting approval	Fail funding cut-off	Pending Approval	Approval from originator; continue with other validations
					Pass Funding cut- off	Pending CCM Approval	Originator Approval received; CCM approval required
<b><i>Pending Amendment s</i></b>							
	Cancel			Wait for confirmation of cancellation		Pending Amendment	
	Confirm Cancellation			For details, see BRD		Cancellation Confirmed	
	Reject Cancellation			Proceed as normal		Rejected Cancellation	
	Amend					Pending Amendment	Make amendments and save amendments
	Confirm Amendment			See BRD for details		Amendment Confirmed	
	Reject Amendment			Proceed as normal		Rejected Amendments	



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WEB Based	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
<b><i>All Fails Fixed</i></b>							
		Validate at point of failure again		<b><i>When fails are fixed and resubmitted</i></b>			
			<b><i>Pass all validati ons</i></b>	<b><i>Pass to Funding and Outgoing</i></b>		Pending Assignment of External Account	
<b><i>Funding</i></b>							
Identify Real World Nostro Account				RW Nostro Account identified		Pending Message Generation	
<b><i>Outgoing</i></b>							
Intraday Release	User select items for Netting or Split				Pending Netting/Split	Pending Release	
	<i>Netting</i>			Perform Netting	Netted	Netted	If user wants to Un-net
	<i>Un Netting</i>			Remove net id		Pending Release	
	Release – Manual or Auto			Perform the release of payments		Payment Sent	
Matching				<i>Every item will be unmatched</i>	Unmatched		
		Auto Match	Pass	Process Accounting, associated funding and settlement or request. Send status message back to originator		Settled	
			Fail	Send to Unapplied Queue		Unmatched	
			Pass	Process Accounting,	Manual Match	Settled	

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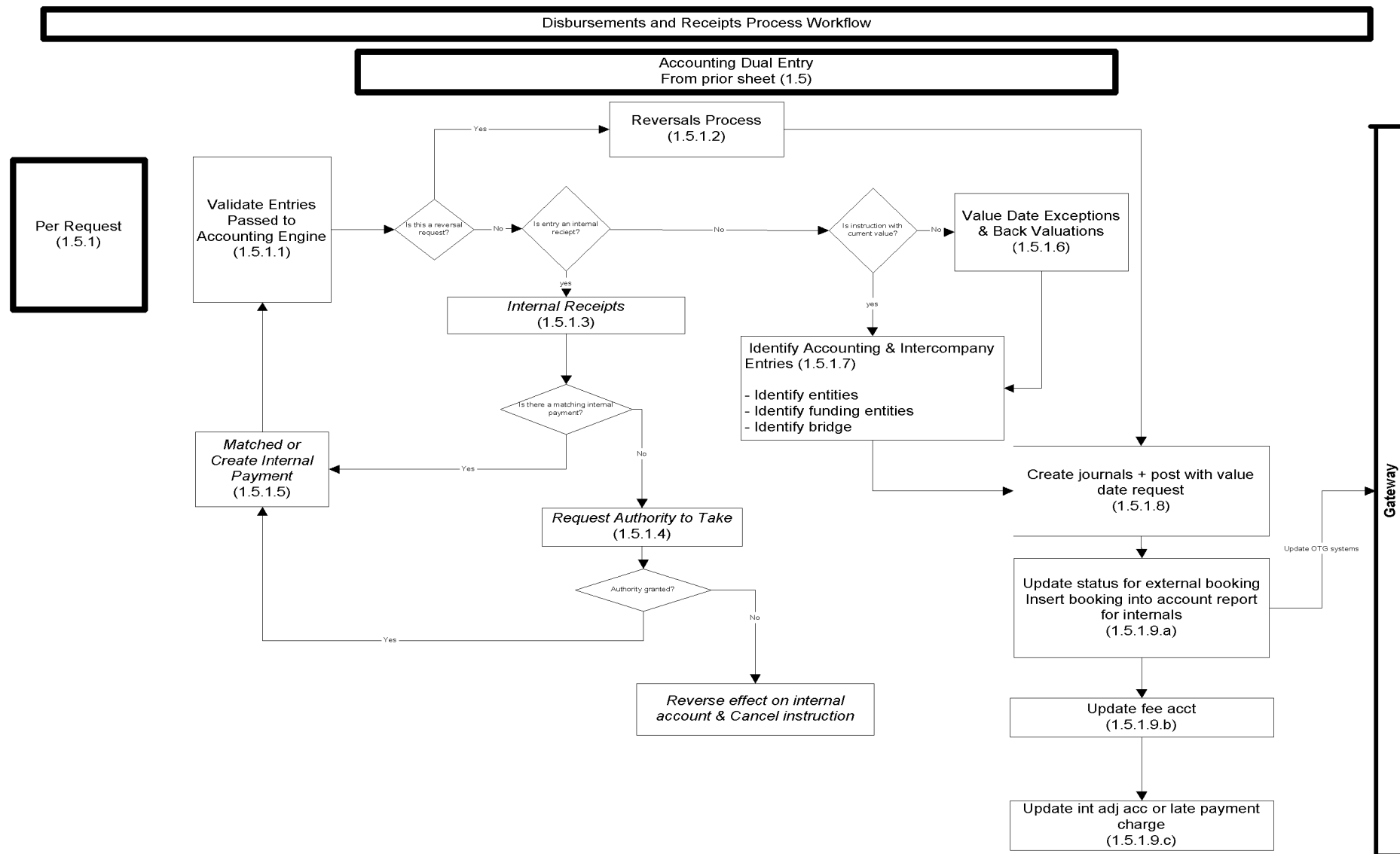
WEB Based	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
		Manual Match		associated funding and settlement or request. Send status message back to originator			
			Fail	Send to Unapplied Queue		Unmatched	
	If previously matched, and then unmatched			Reverse any accounting and place in pending queue.		Unmatched	
	Applied/Unapplied Funds user selects items to create GCCM records		Pass	Process accounting for the control account, suspense. Send 'Settled message back to originator'	Manual created entries	Settled	
<b>After Release</b>							
MINT or SWIFT				Store with the related payment request	ACK received; NAK received		
Bank Confirmation				<i>Every payment sent would have awaiting confirmation</i>		Awaiting Confirmation from bank	
		900 and 910 received	Pass (MATCH)			Confirmation Received from bank	
			Fail (NO MATCH)			Awaiting Confirmation from bank	

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### 10.1.3. Overview of Accounting

#### 10.1.3.1. Diagram of Accounting per Request



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**10.1.3.2. Initial Suggested Statuses for Accounting Per Request**

During the accounting processing, there will be validations performed and each status must be retained. The following details the validations and the status at each stage from input to the release of the payment.

Accounting	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
Identify Funding Relationship		Legal entity of debit account = Legal entity of credit account		One journal, a debit and credit entry, with the same legal entity.		Journals Created	
		Legal entity of debit account ◇ legal entity of credit account		Create journals, minimum of 3 with potential maxium of 4		Journals Created	
		Funding entity of debit account = Funding entity of credit account					
		Legal entity of debit account ◇ legal entity of credit account		Use the real world account/debit account to identify Funding entity. Go thru Funding entity relationship entity to get pair off with Funding entity for internal or credit account		Journals Created	
		Funding entity of debit account ◇ Funding entity of credit account		Create journals, minimum of 4 and max of 6			
			Failed	After going thru the entity relationship for the debit account and no DBS accounts found	Funding Entity missing	Funding Bridge Not Found	User to update the account static table. Resubmit for accounting entries
Payments		Business Account or Real World Nostro Account	Pass		Accounting Statics Passed		
			Fail	Send to Accounting Repair Queue	Accounting Statics Failed	Insufficient accounting data	<ul style="list-style-type: none"> <li>Add/modify missing account to account static</li> </ul>

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Accounting	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
							<ul style="list-style-type: none"> <li>table.</li> <li>Use screen to change in accounting repair queue and resubmit for accounting.</li> </ul>
		Value Date = current date but currency is a Holiday		Process with value date requested on payment instruction			
		Value Date < than current date and currency is not a Holiday of currency		Flag as backvalue if not done previously.  Restate balances and calculate BV interest expense			
		Currency of payment = currency of account			Accounting currency Passed		
		Currency of payment <> currency of account		Flag currency not same as account  This will be used for the FX piece of accounting			
Internal Receipts		Check the credit account(?) to see whether there is an offsetting entry	Pass (Yes)	Link the 2			
			Fail (No)	Check if the debit account is on the pre-advice and there is offsetting entry	Link the 2		
				Debit Account on preadvice but NO offsetting entry		Awaiting debit entry approval	CCM emails owner to request authorization to pass debit entry to account
	Authorization received			<ul style="list-style-type: none"> <li>Create the payment and accounting entries</li> <li>Link the 2</li> </ul>			
	Reject			Do nothing			
				Debit Account NOT on			CCM emails the credit

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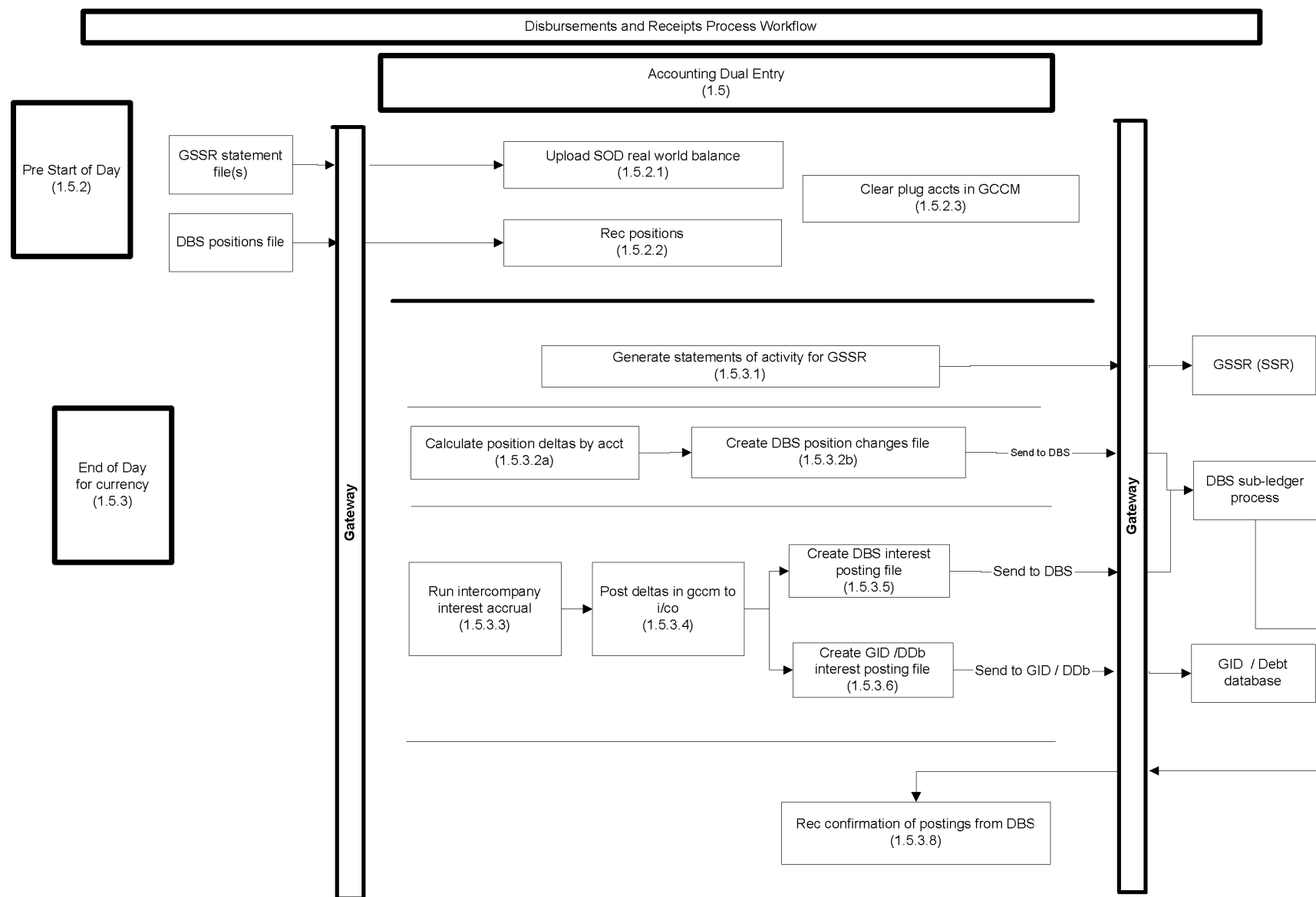
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Accounting	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
				pre-advice			account owner to request entry to be resubmitted  When resubmitted; mark OLD delete and just use the NEW??  Sounds reasonable so yes
All Failed Accounting						Pending Accounting Amendments	
	Amend account numbers	Re-validate	Pass	Move to create accounting entries		Accounting Passed	
			Fail			Pending Accounting Amendments	Fix and resubmit
	Resubmit to Accounting	Re-validate	Pass	Move to create account entries			
			Fail			Pending Accounting Amendments	Fix and resubmit
UPDATE Balances						Accounting posted	

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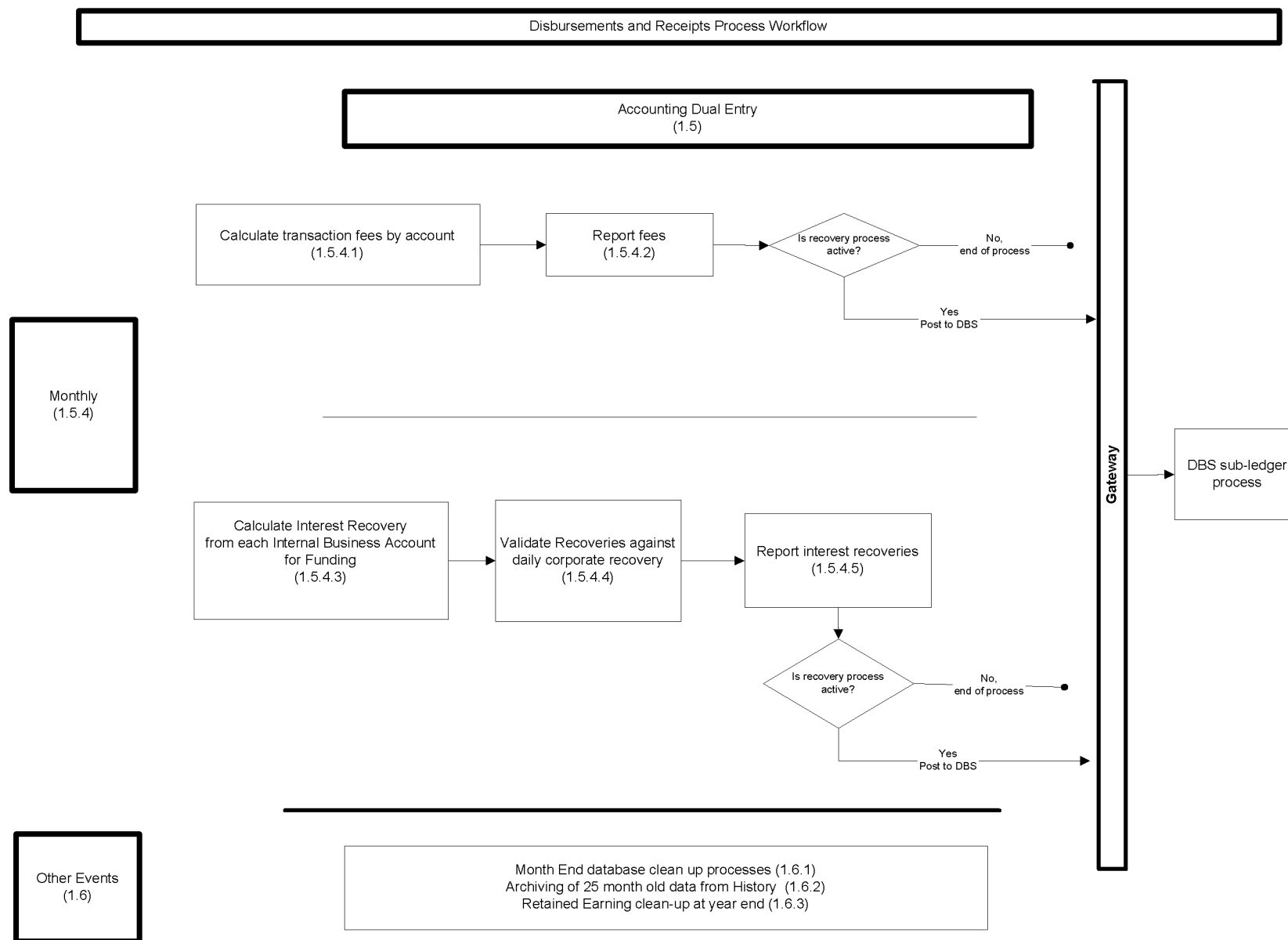
### 10.1.3.3. Diagram of End of Day Accounting and Start of Day Reconciliation



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### 10.1.3.4. Diagram of End of Month Processes





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## 10.2. Accounting Examples

### 10.2.1. Payment on Behalf of Business – LBHI for LBSF

LBSF		LBHI	
ASAP / ITS	GCCM		Real World Agent Bank for LBHI
P&L in LBSF		LBHI Nostro	
Dr	Cr	Dr	Cr
100 (a)		100 (b1)	
LBSF Internal Business Account		LBHI Intercompany with LCPI	
Dr	Cr	Dr	Cr
	100 (a)	100 (b1)	
LBSF Intercompany with LBHI		LBSF Internal Business Account	
Dr	Cr	Dr	Cr
	100 (b1)	100 (b1)	

- a) LBSF has interest payable to customer (as a result of interest rate swap) and requests Treasury to pay
- b1) Journal entry to i/co account in LBSF for LBHI representing payable to LBHI
- b1) Journal entry to i/co account in LBHI for LBSF representing payable to LBHI
- b2) LBHI pays to customer

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**10.2.2. Internal payment between LBI and LBIE**

MTS		ITS		GCCM					
Trading Book in LBI		Trading Book in LBIE		LBHI Control Nostro		LBHI Intercompany with LBHI UK		LBHI UK Intercompany with LBIE	
Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr
100 (a)			100 (a)	100 (d)	100 (b)				
LBI Control Nostro		LBIE Control Nostro		LBHI Intercompany with LBI		LBHI UK Intercompany with LBHI		LBIE Intercompany with LBHI UK	
Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr
	100 (a)	100 (a)		100 (b)			100 (d)		100 (f)
LBI Intercompany with LBHI		LBHI UK Intercompany with LBHI		LBIE Intercompany with LBHI UK		LBHI UK Control Nostro		LBIE Control Nostro	
Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr
					100 (c)		100 (e)		100 (g)
				100 (c)		100 (f)	100 (e)		100 (g)

- a) LBI trades with LBIE and settles 'cash' rather than intercompany between entities direct
- b) Journal entry to i/co account with in LBHI representing receivable from LBI
- c) Journal entry to i/co account with in LBI representing payable to LBHI
- d) Journal entry to i/co account with in LBHI representing payable to LBHI UK
- e) Journal entry to i/co account with in LBHI UK representing receivable from LBHI
- f) Journal entry to i/co account with in LBHI UK representing payable to LBIE
- g) Journal entry to i/co account with in LBIE representing receivable from LBHI UK
- h) Reconciliation of all control and intercompany accounts

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- ◆ Net result is LBI has increased payable to LBHI, LBIE has reduced payable to LBHI UK Branch rather than a direct intercompany position between the two regulated entities.
- ◆ Treasury and Reg. Controller groups monitor intercompany positions real time to ensure both regulated entities do not have unsecured receivables from the funding entities and minimise trapped cash positions

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### **10.3. *ADDENDUM to the GCCM BRD***

#### **10.3.1. Security:**

GCCM will implement the following security features

1. Wherever possible, use a secured way of communicating with the source systems. Not all the source systems are on the standard platform. An effort should be made in long run to bring these systems on to the standard messaging platform.
2. As users will be accessing GCCM using a web based interface, GCCM will use Lehman's single sign-on method in order to leverage the LehmanLive authentication integration services.

#### **10.3.2. Entitlements:**

Entitlements will further restrict users to perform certain operations within GCCM. Users will be grouped into functional groups such as "Operations", "Managers" to enforce certain restrictions at approval levels. Furthermore, it is possible to restrict the user from accessing certain screens.

As of this writing, assessment is currently underway to determine the suitability of using ELMO.

#### **10.3.3. Feeds:**

As each payments comes to the Gateway from each of the source systems, the transaction will be stored in a repository.

GCCM will send these payments through the validation process and any failed items will be sent to the repair queue whereas the successful items will be released from GCCM to the agent banks.

Through each stage of process within GCCM, a message will be sent back to each source system of the state of each payment.

In addition, as part of the end of day GCCM process, there will be a reconciliation of released payments to the payments residing in the repository. A report will be generated for any differences and emailed to the appropriate parties.

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#### **10.3.4. Auditing**

GCCM will be using a comprehensive logging framework to enable debugging and auditing. Each action taken by the user will be tracked by timestamp and activity. Furthermore, as each payment moves thru the payment processing channel, the state of the transaction will be recorded. For example, if an item failed a transaction escalation limit, it will record the failure and a CM approval is required. When item is approved, it will track the approver user id, timestamp.

#### **10.3.5. Additional bullets:**

##### **10.3.5.1. Inter company paths:**

There will be a funding entity tree showing each entity's parent and path. Their position on the tree represents the funding structure rather than its actual position in firm's legal entity structure.

This will allow finding of inter company relationships for the creation of accounting entries.

##### **10.3.5.2. Reconciliation process:**

There will be 2 reconciliation processes to be undertaken:

1. As part of the Start of Day process, a reconciliation of the DBS account balances to the GCCM account balances will be performed.

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2. There will be a reconciliation in GSSR of the bank accounts against the RWN accounts in GCCM and each individual's source system in house accounts with GCCM in house account balances. Any differences will be brought into GCCM and reported as a 'REC' item.

**10.3.5.3. Credits/Debits and Daily Nets:**

The tables storing the end\_of\_day balances will be in debits/credits accounting signage conventions. In other words, debits will be positives and credits will be negatives. The intraday/eod of day generation of journals will always have a credit and a debit entry. Therefore, on an individual transaction, the sum of all the journals will be zero. Systematically, at the eod of the day, there will be a check to make sure that the sum of credits and debits for the day's activities will be zero.

**10.3.5.4. Unsecured receivables for regulated entities:**

There will be an indicator on the legal entity table stating that an entity is a regulated entity. On a daily basis, GCCM will provide a warning message on the real-time balance viewing as well as end of day reports for showing the "Due From" accounts and their respective amounts for each regulated entity. CCM will have to act on this by paying down these receivables so that the regulated entity at the end of the month will have 'Due From' outstanding of zero.

**11. Approval & Sign-off**

List names of the senior representatives who will sign off this document, both for the requirements section and the service level agreement.

Department/Role	Name	Signature	Date
SPOCS			

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**EXHIBIT B**

Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements

December 31, 2007

**1. Operations**

Lehman Re Ltd. (the "Company") was incorporated on April 1, 1998 under the laws of Bermuda to underwrite property and casualty, as well as life and annuity, insurance and reinsurance. The Company was capitalized and commenced operations on June 1, 1998. The Company offers customized products organized around three areas: finite and structured financial solutions, property catastrophe reinsurance and life and annuity reinsurance. The Company utilizes brokers and intermediaries to source both insurance and reinsurance business. The Company is a wholly-owned subsidiary of Lehman Brothers Holdings Inc. ("Holdings" or "parent company"). On December 12, 2007, its wholly-owned subsidiary, Zen Limited, which was incorporated in Bermuda, was dissolved. On May 11, 2007, the Company acquired Congress Life Insurance Company ("Congress"), a life insurance company licensed in 42 states and Washington D.C from JP Morgan Insurance Holdings LLC for \$9.4 million to provide structural advantages as an operating platform for the Company. 119

The Company is also subject to a Bermuda Act of Parliament, Lehman Re Ltd. Act, 1998 (the Act). The Act provides for the creation of legally separate accounts for the conduct of insurance business. The Company does not have any such accounts.

The Company has a Net Worth Maintenance Agreement with the parent company. Under this agreement, the parent company commits to maintain the Company's minimum solvency margin as required under the laws of Bermuda. If the Company does not have the liquidity necessary to enable it to meet its current obligations on a timely basis, the parent company shall (in a mutually satisfactory manner) provide the Company with liquidity needed to enable it to meet its obligations in a timely manner. The obligations of the parent company to provide liquidity shall not include those liabilities arising from separate account business (unless expressly agreed), including but not limited to all risk contracts, policies and event linked financial instruments. The agreement may be terminated in the future by either party.

**2. Significant Accounting Policies**

These consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States. All intercompany transactions have been eliminated. Significant accounting policies are as follows:

Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**2. Significant Accounting Policies (continued)**

**Losses and Loss Adjustment Expenses and Future Policy Benefits**

A reserve for losses and loss adjustment expenses is established for estimated unpaid claims and claim adjustment expenses on reported losses as well as estimated losses incurred but not reported. The liability is based on reports and individual case estimates received from ceding companies as well as management estimates of ultimate losses. Inherent in the estimates of ultimate losses are expected trends in claim severity and frequency and other factors, which could vary significantly as claims are settled. Accordingly, ultimate losses may vary materially from the amounts provided in the financial statements. These estimates are reviewed regularly and, as experience develops and new information becomes known, the reserves are adjusted as necessary. Such adjustments, if any, are reflected in results of operations in the period in which they become known.

Future policy benefits under traditional life and annuity contracts are estimated based upon expected investment yields and assumptions relating to mortality, morbidity, terminations and expenses applicable at the time the contracts are issued. These assumptions are based on the ceding company's experience as well as industry experience and standards and include a margin for adverse deviation. The assumptions vary with the characteristics of the plan of insurance, year of issue, age of insured and other appropriate factors. The liability for future policy benefits represents the present value of future benefits and expenses to be paid in excess of the present value of future net premiums to be received. Rates for discounting future cash flows are based upon the United States dollar and British pound sterling swap curve, and range between 3.50% and 7.37%.

Reinsurance recoverable on future policy benefits have been recorded net of reinsurance premiums payable on contracts, which accrue interest, where the right of offset exists, and credit allowance.

**Cash and Cash Equivalents**

Cash and cash equivalents include highly liquid investments not held for resale with maturities of three months or less.

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Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

2. Significant Accounting Policies (continued)

Fair Values

Investments and financial instruments owned, and Reinsurance liabilities are recognized on a trade-date basis and are carried at fair value. See note 3, "Fair Value of Financial Instruments."

Investments and Financial Instruments

***Mortgage Backed Securities and Government and Agencies*** The Company's mortgage backed securities and government and agencies are classified as trading securities and are carried at fair value with unrealized gains and losses reported in earnings as a component of net gain on investments. Fair value of investments is generally based on listed market prices, where available. If listed market prices are not available, fair value is determined based on other relevant factors, including broker or dealer price quotations and valuation pricing models which take into account time value and volatility factors underlying the financial instruments. For additional information regarding fair value, see Note 3, "Fair Value of Financial Instruments," to the Consolidated Financial Statements.

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***Derivatives and Other Contractual Agreements*** Derivatives are financial instruments whose value is based on an underlying asset (e.g., Treasury bond), index (e.g., S&P 500) or reference rate (e.g., LIBOR), and include futures, forwards, swaps, option contracts, or other financial instruments with similar characteristics. A derivative contract generally represents a future commitment to exchange interest payment streams or currencies based on the contract or notional amount or to purchase or sell other financial instruments or physical assets at specified terms on a specified date. In the normal course of business, the Company enters into derivatives and other contractual agreements for trading and non-trading purposes.

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Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**2. Significant Accounting Policies (continued)**

Derivatives for trading purposes are valued at fair value in the Consolidated Balance Sheets on a net by counterparty basis where a legal right of offset exists and changes in fair values are recorded as net gain or loss on investments in the Consolidated Statements of Income. Derivatives often are referred to as off-balance-sheet instruments because neither their notional amounts nor the underlying instruments are reflected as assets or liabilities of the Company. Instead, the market or fair values related to the derivative transactions are reported in the Consolidated Balance Sheets as assets or liabilities, in Derivatives and other contractual agreements, as applicable. Fair value is generally determined by pricing models. Pricing models utilize a series of market inputs to determine the present value of future cash flows with adjustments, as required, for credit risk and liquidity risk. Credit-related valuation adjustments incorporate historical experience and estimates of expected losses. Additional valuation adjustments may be recorded, as considered appropriate, for new or complex products or for positions with significant concentrations. These adjustments are integral components of the mark-to-market process. For additional information regarding fair value, see Note 3, "Fair Value of Financial Instruments," to the Consolidated Financial Statements.

Prior to January 1, 2007, the Company followed Emerging Issues Task Force ("EITF") Issue No. 02-3, *Issues Involved in Accounting for Derivative Contracts Held for Trading Purposes and Contracts Involved in Energy Trading and Risk Management Activities* ("EITF 02-3"). Under EITF 02-3, recognition of a trading profit at inception of a derivative transaction was prohibited unless the fair value of that derivative was obtained from a quoted market price, supported by comparison to other observable inputs or based on a valuation technique incorporating observable inputs. Subsequent to the transaction date, the Company recognized trading profits deferred at the inception of the derivative transaction in the period in which the valuation of the instrument becomes observable. The adoption of SFAS 157, *Fair Value Measurement* (SFAS 157) nullified the guidance in EITF 02-3 that precluded the recognition of a trading profit at the inception of a derivative contract, unless the fair value of such derivative was obtained from a quoted market price or other valuation technique incorporating observable inputs. For further discussion of our adoption of SFAS 157, see "Accounting and Developments—SFAS 157" below.

The Company utilizes derivative products for non-trading purposes as an end-user to modify the interest rate characteristics of its future policy benefits.

Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**2. Significant Accounting Policies (continued)**

Under SFAS 133, *Accounting for Derivative Instruments and Hedging Activities*, as amended by SFAS No. 138 and SFAS No. 149, *Accounting for Certain Derivative Instruments and Certain Hedging Activities* (collectively, SFAS 133), the accounting for end-user derivative activities is dependent upon the nature of the hedging relationship. In certain hedging relationships, both the derivative and the hedged item will be marked-to-market through earnings for changes in fair value (fair value hedge). In many instances, the hedge relationship is fully effective so that the mark-to-market on the derivative and the hedged item will offset. Any hedge ineffectiveness in this relationship is recorded in policy claims and benefits in the Consolidated Statements of Income.

**Identifiable Intangible Assets**

Identifiable intangible assets with indefinite lives are not amortized. Instead, these assets are evaluated at least annually for impairment.

**Repurchase and Resale Agreements**

Securities purchased under agreement to resell and securities sold under agreement to repurchase are trade financing transactions recorded at their contracted resale or repurchase amount. It is the Company's policy to take possession of securities purchased under agreements to resell. The Company compares the market value of the underlying positions on a daily basis with the related receivable or payable balances, including accrued interest. The Company requires counterparties to deposit additional collateral or return collateral pledged, as necessary, to ensure the market value of the underlying value remains sufficient. Accrued interest is included in accrued investment income, with unrealized gains and losses reflected in net investment income in the Consolidated Statements of Income.

**Income Taxes**

We account for income taxes in accordance with SFAS No. 109, *Accounting for Income Taxes*. We recognize the current and deferred tax consequences of all transactions that have been recognized in the financial statements using the provisions of the enacted tax laws. Deferred tax assets are recognized for temporary differences that will result in deductible amounts in future years and for tax loss carry-forwards. We record a valuation allowance to reduce deferred tax assets to an amount that more likely than not will be realized. Deferred tax liabilities are recognized for temporary differences that will result in taxable income in future years.

Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**2. Significant Accounting Policies (continued)**

Contingent liabilities related to income taxes are recorded when probable and reasonably estimable in accordance with SFAS No. 5, *Accounting for Contingencies*.

For a discussion of the impact of FIN 48, *Accounting for Uncertainty in Income Taxes—an Interpretation of FASB Statement No. 109* (“FIN 48”), see “Accounting Developments —FIN 48” below. The Company elected to be treated as a U.S. domestic insurance company for U.S. federal tax purposes, and is therefore, subject to income taxation in the U.S.

**Foreign Exchange**

Assets and liabilities denominated in non-U.S. dollar currencies are translated at foreign exchange rates in effect at the consolidated balance sheet dates. Revenues and expenses denominated in non-U.S. dollar currencies are translated into U.S. dollars at rates prevailing when the income was earned or expenses incurred. The resulting gains and losses from translating foreign currency transactions into U.S. dollars, net of hedging gains or losses, are included in net gains on investments account in the Consolidated Statements of Income.

**Use of Estimates**

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Although estimates are considered to be fairly stated at the time the estimates are made, actual results could vary materially from those estimates.

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**Reclassification**

Certain prior year amounts have been reclassified to conform to the 2007 presentation.

**Accounting Developments**

**SFAS 157.** In September 2006, the FASB issued SFAS 157. SFAS 157 defines fair value, establishes a framework for measuring fair value, outlines a fair value hierarchy based on inputs used to measure fair value and enhances disclosure requirements for fair value measurements. SFAS 157 does not change existing guidance as to whether or not an instrument is carried at fair value.

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Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**2. Significant Accounting Policies (continued)**

SFAS 157 also (i) nullifies the guidance in EITF 02-3 that precluded the recognition of a trading profit at the inception of a derivative contract, unless the fair value of such derivative was obtained from a quoted market price or other valuation technique incorporating observable inputs; (ii) clarifies that an issuer's credit standing should be considered when measuring liabilities at fair value; (iii) precludes the use of a liquidity or block discount when measuring instruments traded in an active market at fair value; and (iv) requires costs related to acquiring financial instruments carried at fair value to be included in earnings as incurred.

The Company elected to early adopt SFAS 157 at the beginning of our 2007 calendar year and we recorded the difference between the carrying amounts and fair values of (i) stand-alone derivatives and/or certain hybrid financial instruments measured using the guidance in EITF 02-3 on recognition of a trading profit at the inception of a derivative, and (ii) financial instruments that are traded in active markets that were measured at fair value using block discounts, as a cumulative-effect adjustment to opening retained earnings. The Company did not realize any impact as a result of adopting SFAS 157. For additional information regarding our adoption of SFAS 157, see Note 3, "Fair Value of Financial Instruments".

**SFAS 159.** In February 2007, the FASB issued SFAS 159, *The Fair Value Option for Financial Assets and Financial Liabilities* (SFAS 159) which permits certain financial assets and financial liabilities to be measured at fair value, using an instrument-by-instrument election. The initial effect of adopting SFAS 159 must be accounted for as a cumulative-effect adjustment to opening retained earnings for the calendar year in which we apply SFAS 159. Retrospective application of SFAS 159 to calendar years preceding the effective date is not permitted.

The Company elected to early adopt SFAS 159 beginning in our 2007 calendar year. The adoption of SFAS 159 had no impact on the Company's historical financials statements.

**FIN 48.** In June 2006, the FASB issued FIN 48, which sets out a framework for management to use to determine the appropriate level of tax reserves to maintain for uncertain tax positions. This interpretation of SFAS 109 uses a two-step approach wherein a tax benefit is recognized if a position is more likely than not to be sustained, and the amount of benefit is then measured on a probabilistic approach, as defined in FIN 48. FIN 48 also sets out disclosure requirements to enhance transparency of an entity's tax reserves. The Company must adopt FIN 48 as of the beginning of our 2008 calendar year. The adoption of FIN 48 had no impact on the Company's financial statements.



Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**2. Significant Accounting Policies (continued)**

**FSP FIN 39-1.** In April 2007, the FASB directed the FASB Staff to issue FSP No. FIN 39-1, *Amendment of FASB Interpretation No. 39* ("FSP FIN 39-1"). FSP FIN 39-1 modifies FIN No. 39, *Offsetting of Amounts Related to Certain Contracts*, and permits companies to offset cash collateral receivables or payables with net derivative positions under certain circumstances. FSP FIN 39-1 is effective for calendar years beginning after November 15, 2007, with early adoption permitted. FSP FIN 39-1 does not affect the Consolidated Financial Statements because it clarified the acceptability of existing market practice, which we use, of netting cash collateral against net derivative assets and liabilities.

**FSP FIN 48-1.** In May 2007, the FASB directed the FASB Staff to issue FSP No. FIN 48-1, *Definition of "Settlement" In FASB Interpretation No. 48* ("FSP FIN 48-1"). Under FSP FIN 48-1, a previously unrecognized tax benefit may be subsequently recognized if the tax position is effectively settled and other specified criteria are met. The Company is evaluating the effect of adopting FSP FIN 48-1 on the Consolidated Financial Statements as part of our evaluation of the effect of adopting FIN 48.

**3. Fair Value of Financial Instruments**

Investments and financial instruments owned, and reinsurance liabilities, are presented at fair value. Fair value is defined as the price at which an asset or liability could be exchanged in a current transaction between knowledgeable, willing parties. Where available, fair value is based on observable market prices or parameters or derived from such prices or parameters. Where observable prices or inputs are not available, valuation models are applied. These valuation techniques involve some level of management estimation and judgment, the degree of which is dependent on the price transparency for the instruments or market and the instruments' complexity.

Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**3. Fair Value of Financial Instruments (continued)**

Beginning January 1, 2007, assets and liabilities recorded at fair value in the Consolidated Balance Sheets are categorized based upon the level of judgment associated with the inputs used to measure their fair value. In accordance with SFAS 157, the valuation techniques used for assets and liabilities accounted for at fair value are generally under the income approach. Income approach valuation techniques convert future amounts, such as cash flows or earnings, to a single present amount, or a discounted amount. These techniques rely on current market expectations of future amounts. Examples of income approach valuation techniques include present value techniques; option-pricing models, binomial or lattice models that incorporate present value techniques; and the multi-period excess earnings method. This approach described within SFAS 157 is consistent with generally accepted valuation methodologies. The valuation method considers the definition of an exit price and the nature of the asset or liability being valued and significant expertise and judgment is required. Hierarchical levels – defined by SFAS 157 and directly related to the amount of subjectivity associated with the inputs to fair valuation of these assets and liabilities – are as follows:

Level I – Inputs are unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date.

Level II – Inputs (other than quoted prices included in Level I) are either directly or indirectly observable for the asset or liability through correlation with market data at the measurement date and for the duration of the instrument's anticipated life.

Level III – Inputs reflect management's best estimate of what market participants would use in pricing the asset or liability at the measurement date. Consideration is given to the risk inherent in the valuation technique and the risk inherent in the inputs to the model.

An asset or a liability's categorization within the fair value hierarchy is based on the lowest level of significant input to its valuation.

Fair value of investments and financial instruments owned, and reinsurance liabilities at December 31, 2007 were:

Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

3. Fair Value of Financial Instruments (continued)

	At December 31, 2007			
	Level I	Level II	Level III	Total
Investment and financial instruments owned:				
Mortgage backed securities	\$ -	\$ 73,871,386	\$ -	\$ 73,871,386
Government and agencies	-	5,044,541	-	5,044,541
Derivatives and other contractual agreements	-	51,332,754	-	51,332,754
Total investment and financial instruments owned	\$ -	\$ 130,248,681	\$ -	\$ 130,248,681
Reinsurance liabilities	\$ -	\$ -	\$ 4,637,024	\$ 4,637,024
Total reinsurance liabilities	\$ -	\$ -	\$ 4,637,024	\$ 4,637,024

The table presented below summarizes the change in balance sheet carrying value associated with Level III financial instruments during the calendar year ended December 31, 2007. Caution should be utilized when evaluating reported net revenues for Level III Financial instruments. The values presented exclude economic hedging activities that may be transacted in instruments categorized within other fair value hierarchy levels. Actual net revenues associated with Level III financial instruments inclusive of hedging activities could differ materially.

	Balance December 31, 2006	Net Payments, Purchases and Sales	Net Transfers In (Out)	Losses (Gains) <sup>(1)</sup> Realized Unrealized	Balance December 31, 2007
Reinsurance liabilities	\$ -	\$ 3,315,658		\$ 1,321,366	4,637,024

<sup>(1)</sup> The current period losses (gains) from changes in values of Level III financial instruments represent losses (gains) from changes in values of those financial instruments only for the period(s) in which the instruments were classified as Level III.

<sup>(2)</sup> The unrealized losses (gains) is reflected in other expense line of the consolidated statements of income.

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Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**7. Reinsurance**

In the ordinary course of business the Company cedes certain risks to other companies. These reinsurance contracts do not relieve the Company from its primary liability should any reinsurer be unable to meet its obligations. Failure of reinsurers to honor their obligations could result in losses to the Company. The Company evaluates the financial condition of its reinsurers to minimize its exposure to significant losses from reinsurer insolvencies.

At December 31, 2007 and 2006, reinsurance recoverable was net of reinsurance premiums payable in the amount of, approximately, \$117.1 million and \$125.6 million, respectively and an allowance for reinsurance recoverable in the amount of \$2.5 million and \$2.5 million, respectively.

The effect of reinsurance on premiums written, premiums earned and losses incurred and policy claim benefits is as follows:

	Premiums Written		Premiums Earned	
	2007	2006	2007	2006
Assumed – Property & Casualty (non-affiliate)	\$ 75,969,396	\$ 14,594,299	\$ 61,192,554	\$ 10,377,356
Assumed – Property & Casualty (affiliate)	1,015,417	1,515,000	1,071,178	1,513,274
Ceded – Property & Casualty	(75,969,396)	(12,766,048)	(61,189,307)	(9,118,132)
Net	<u>\$ 1,015,417</u>	<u>\$ 3,343,251</u>	<u>\$ 1,074,425</u>	<u>\$ 2,772,498</u>

	Losses Incurred and Policy Claim Benefits	
	2007	2006
Assumed – Property & Casualty	\$ 10,112,724	\$ 1,262,465
Assumed – Life & Annuity	13,054,322	9,448,079
Ceded – Property & Casualty	(10,112,724)	(1,262,465)
Ceded – Life & Annuity	(5,092,945)	(5,246,099)
Net	<u>\$ 7,961,377</u>	<u>\$ 4,201,980</u>

Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**9. Related Party Transactions (continued)**

In the ordinary course of business the Company uses services of other affiliates, mainly investment related. These amounts are unsecured, accrue interest at LIBOR, and are included in receivable from and payable to affiliates in the Consolidated Balance Sheets.

**10. Statutory Requirements**

The Bermuda Insurance Act 1978 and related regulations (the Act) requires the Company to meet a minimum solvency margin. Statutory capital and surplus as of December 31, 2007 and 2006 was approximately \$377.3 million and \$358.5 million, respectively, and the minimum amount required to be maintained by the Company was approximately \$100.3 million and \$100.3 million, respectively. The Company meets the minimum liquidity ratio, whereby relevant assets as defined by the Act, exceed 75% of relevant liabilities. In this regard the declaration of dividends from shareholder's equity is limited to the extent that the above requirements are met. No dividends were declared in 2006 and 2007. At December 31, 2007 and 2006, retained earnings and additional paid-in capital of approximately \$99.0 million and \$99.0 million, respectively, were not available for distribution.

The Bermuda Monetary Authority (the Authority) is introducing an electronic risk-based capital model, Bermuda Solvency Capital Requirement (BSCR or standard model), to Class 4 general business insurers. The Authority will maintain the existing solvency basis until the 2008 year-end. Under the provisions of Sections 29A and 29B of the Act, the Authority will require submission of the standard model and related financial reporting for the 2007 year-end. Effective December 31, 2008, Class 4 general business insurers will be required to hold total statutory capital and surplus exceeding the Enhanced Capital Requirement ("ECR") prescribed by the Insurance (Prudential Standards) (Class 4 Solvency Requirement) Order 2008 ("the Order"). Insurers will also be expected to hold a safety margin or buffer above the ECR, at least in total equivalent to 120% of ECR ("Target Capital").

Congress is subject to certain Risk-Based Capital ("RBC") requirements as specified by the National Association of Insurance Commission (NAIC). Under those requirements, the amount of capital and surplus maintained by Congress is to be determined based on the various risk factors related to it. At December 31, 2007, the Company meets the RBC requirements. Statutory capital and surplus of Congress amounted to \$56.5 million in 2007. Without prior approval of the Director of the Arizona Department of Insurance, dividends and distributions to shareholders are limited to the net gain from operations or 10% of surplus of Congress, whichever is less. At December 31, 2007, net gains from operations of approximately \$0.07 million, were available for distribution. There were no dividend payments in 2007.

Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**11. Commitments and Contingencies**

At December 31, 2007 and 2006, the Company held cash collateral of \$343.6 million and \$61.1 million, respectively, for the purposes of securing potential obligations of its reinsurers.

At December 31, 2007 and 2006, the Company had investments of approximately \$73.9 million and \$133.3 million, respectively, and securities purchased under the agreements to resell of approximately \$182.0 million and \$185.0 million, respectively, that were held in trust accounts for the benefit of ceding companies.

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**EXHIBIT C**

	<i>Filing</i>	<i>Dividend Payments</i>						
Date	10/5/2008	4/17/2012	10/1/2012	4/4/2013	10/3/2013	4/3/2014	10/2/2014	Total
<i>LBCC Dividend Rate</i>		25.66%	17.04%	10.34%	23.26%	11.11%	12.59%	100.00%
LBCC Dividend Payments		\$22,479,350.68	\$14,930,791.01	\$9,061,448.38	\$20,382,052.67	\$9,735,354.64	\$11,032,002.62	\$87,621,000.00
Post Petition Interest - GCCM Rate	5.37875%	\$4,572,602.40	\$3,473,028.95	\$2,408,333.11	\$6,099,948.22	\$3,248,391.21	\$4,070,465.86	\$23,872,769.75
Post Petition Interest - English Statutory Rate	8.00000%	\$7,026,732.05	\$5,369,540.16	\$3,748,834.93	\$9,559,555.66	\$5,125,544.06	\$6,467,018.10	\$37,297,224.96



**Exhibit C**

Chase Lincoln First Commercial Corporation  
Postpetition Interest Demand Annex

LBCC/Lehman Re

Chase Lincoln First Commercial Corp (“Chase”) is the holder of \$8,802,249.57 of the \$87,621,000.00 claim numbered 28308 (the “Lehman Re Claim”) against Lehman Brothers Commercial Corporation (“LBCC”) filed by the joint provisional liquidators appointed by the Supreme Court of Bermuda on behalf of Lehman Re Ltd. (the “Lehman Re”). The Lehman Re Claim relates to certain Lehman Re funds held in an account at LBCC that had been transferred to LBCC by Lehman Brothers International (Europe) (“LBIE”) in violation of a custody agreement between Lehman Re and LBIE, dated March 19, 1999 (the “Custody Agreement”). On February 6, 2012, Lehman Re, LBCC and various other parties entered into a settlement agreement which, among other things, allowed Lehman Re’s claim against LBCC in the above amount. Subsequently, Chase acquired a portion of the Lehman Re Claim.

According to the demand for postpetition interest filed by Lehman Re, the applicable interest rate that applies to the Lehman Re Claim is the rate specified in Lehman’s Business Requirement Document for its Global Cash and Collateral Management (“GCCM”) referred to as the “GCCM Rate”. As set forth in the Lehman Re demand, in the event the GCCM Rate did not apply for any reason, the English statutory interest rate of 8% would be applicable as the Custody Agreement between Lehman Re and LBIE is governed by the laws of England. See Judgments Act 1838.

Chase further refers to the Lehman Re demand for an explanation as to the facts and legal basis for application of those rates.

The calculations supporting Chase’s demand for postpetition interest applying the GCCM Rate and the statutory rate are attached hereto.

This submission is being made by Chase’s in-house counsel and has been prepared by Chase to respond in good faith to the questions posed in the postpetition interest questionnaire, and Chase reserves all of its rights in connection with the Lehman Re Claim. This submission does not represent the position of any affiliate of Chase.

**Exhibit D**

Lehman Re Ltd.  
Postpetition Interest Demand Annex (with exhibits)

**UNITED STATES BANKRUPTCY COURT  
SOUTHERN DISTRICT OF NEW YORK**

**In re:**

**LEHMAN BROTHERS HOLDINGS INC., *et al.*,  
  
Debtors.**

**Chapter 11**

**Case No. 08-13555 (SCC)**

**(Jointly Administered)**

**ANNEX TO DEMAND FOR POSTPETITION INTEREST SUBMITTED  
BY LEHMAN RE LTD. AGAINST  
LEHMAN BROTHERS COMMERCIAL CORPORATION**

1. On September 15, 2008 (the “Petition Date”), Lehman Brothers Holdings Inc. and several of its subsidiaries commenced a voluntary proceeding (the “LBHI Proceeding”) under chapter 11 of title 11 of the United States Code, in the United States Bankruptcy Court for the Southern District of New York (the “Bankruptcy Court”).

2. Also on September 15, 2008, Lehman Brothers International (Europe) (“LBIE”) entered into administration by order of the High Court Chancery Division of England and Wales.

3. On October 5, 2008 (the “LBCC Petition Date”), Lehman Brothers Commercial Corporation (“LBCC”) commenced a voluntary proceeding (the “LBCC Proceeding”) in the Bankruptcy Court under chapter 11 of title 11 of the United States Code. The LBHI Proceeding and the LBCC Proceeding have been consolidated for administrative purposes (the “Lehman Proceeding”).

4. On September 23, 2008, a winding-up proceeding was commenced on behalf of Lehman Re Ltd. (“Lehman Re”) in the Supreme Court of Bermuda (the “Bermuda Court”). By order of the Bermuda Court dated September 23, 2008, Peter C.B. Mitchell and D. Geoffrey Hunter were appointed as the joint provisional liquidators (the “JPLs”) for Lehman Re. The

Bermuda Court subsequently appointed Dan Schwarzmann and Garth Calow as successor JPLs for Lehman Re on April 8, 2010 and July 19, 2011, respectively.

5. On August 6, 2009, the JPLs filed a Verified Petition Under Chapter 15 for Recognition of a Foreign Main Proceeding in the Bankruptcy Court, and by order dated September 24, 2009, the Bankruptcy Court granted such recognition and other related relief (the “Chapter 15 Proceeding”). See Docket Nos. 2 and 56 in the Chapter 15 Proceeding.

6. On September 22, 2009, the JPLs, on behalf of Lehman Re, filed Proof of Claim No. 28308 (the “Claim”) against LBCC relating to certain Lehman Re funds (the “Funds”) transferred to LBCC (the “LBCC Account”) by LBIE. The Funds were subject to the terms of a custody agreement (the “Custody Agreement”) between Lehman Re and LBIE, dated March 19, 1999. LBIE transferred the funds to LBCC prior to the LBCC Petition Date in breach of the terms of the Custody Agreement.

7. On February 6, 2012, Lehman Re, LBCC, and various other parties entered into a settlement agreement (the “Settlement Agreement”) that provided for, among other things, the Claim to be allowed in the amount of \$87,621,000.00, based on the balance of the LBCC Account in September 2008 and the application of certain exchange rate adjustments.

8. On March 22, 2012, the Bankruptcy Court entered orders in the Lehman Proceeding and the Chapter 15 Proceeding approving the Settlement Agreement. See Docket No. 27085 in the Lehman Proceeding and Docket No. 136 in the Chapter 15 Proceeding.

9. Pursuant to an agreement dated November 18, 2013, Lehman Re assigned 36.11% or \$31,642,936.34 of the Claim to CCP Credit Acquisition Holdings, L.L.C. (“CCP”) and 19.51% or \$17,090,986.87 of the Claim to Centerbridge Special Credit Partners II, L.P. (“CSCP”). Chase Lincoln First Commercial Corp. (“Chase Lincoln”) ultimately acquired

portions of the CCP and CSCP holdings such that it now owns 10.05% or \$8,802,249.57 of the Claim. Lehman Re retains 44.38% or \$38,887,076.79 of the Claim.

10. In response to the Order Establishing Bar Date for Demands for Postpetition Interest Against Lehman Brothers OTC Derivatives Inc. and Lehman Brothers Commercial Corporation, which was entered by the Bankruptcy Court on March 24, 2015 (Docket No. 48966 in the Lehman Proceeding), the JPLs, on behalf of Lehman Re, hereby submit this annex to Lehman Re's Demand for Postpetition Interest from LBCC (the "Demand").

11. Lehman Re is not aware of an express written agreement between LBIE and LBCC governing LBIE's transfer of the Funds to LBCC and the management thereof. However, the Lehman group did have express written policies dictating the appropriate interest rate for intercompany claims. Specifically Lehman's Business Requirement Document for its Global Cash and Collateral Management ("GCCM") system accounts for the "intercompany recover of the cost of funding" by setting the "rates at which credit and debit interest is paid...[at] the Treasury Index rate. Currently the Index rate is 1 week LIBOR flat". See Business Requirement Document GCCM § 5.3.2.3, attached hereto as Exhibit A. Further, Lehman Re's audited financial statements indicate that its accounts with Lehman affiliates accrued interest at LIBOR. See, e.g., Lehman Re Ltd. and Subsidiary, Notes to Consolidated Financial Statements § 9, attached hereto as Exhibit B.

12. The Funds in the LBCC Account were denominated in British pounds sterling. The appropriate LIBOR index, therefore, is the GBP 1 week LIBOR rate, which yielded 5.3785% (the "GCCM Rate") on October 3, 2008, the last closing yield prior to the commencement of the LBCC Proceeding on Sunday, October 5, 2008.

13. Applying the GCCM Rate to the amount of the \$87,621,000.00 Claim that remained unpaid during the period starting on the LBCC Petition Date and ending on October 2,

2014 (the date upon which total distributions by LBCC on account of the Claim totaled \$87,621,000.00), indicates that the total post-petition interest owed by LBCC on account of the Claim is \$23,872,769.75.<sup>1</sup> Attached as Exhibit C is a spreadsheet detailing the calculation of total post-petition interest owed by LBCC on account of the Claim.

14. Because Lehman Re holds 44.38% of the Claim, it is entitled to \$10,594,974.16 in post-petition interest from LBCC based on the GCCM Rate.

15. We understand that CCP, CSCP, and Chase Lincoln will submit demands for post-petition interest from LBCC with regard to their respective portions of the Claim.

16. In filing the Demand, the JPLs, on behalf of Lehman Re, expressly reserve all rights and causes of action that Lehman Re may have against LBCC. Furthermore, Lehman Re, by the JPLs, expressly reserves all rights to amend, modify and/or supplement the Demand in any respect.

17. Nothing contained in the Demand nor subsequent appearance, pleading, claim or suit is intended to be a waiver or release of: (i) the right of either the JPLs or Lehman Re to have final orders in non-core matters entered only after de novo review by a district court judge; (ii) the right of Lehman Re or the JPLs to a jury trial in any proceeding so triable herein or, in any case, any controversy or proceeding related hereto; (iii) the right of Lehman Re or the JPLs to move to withdraw the reference with respect to the subject matter of this Demand, any objection thereto or any other proceeding which may be commenced in the Lehman Proceeding against or otherwise involving Lehman Re or the JPLs, including without limitation, any

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<sup>1</sup> Lehman Re believes that if the GCCM Rate did not apply for any reason, the English statutory interest rate of 8% (the "English Statutory Rate") would be applicable as the Custody Agreement between Lehman Re and LBIE is governed by the laws of England. See Judgments Act 1838. Applying the English Statutory Rate, the total post-petition interest owed by LBCC on account of the Claim is \$37,297,224.96.

adversary proceeding that was or may be commenced by any party or committee in either the LBHI Proceeding or in the LBCC Proceeding; or (iv) any other rights, claims, actions, defenses, setoffs or recoupments to which Lehman Re, by the JPLs, is or may be entitled under agreements, documents or instruments, in law or equity, all of which rights, claims, actions, defenses, setoffs and recoupments are expressly reserved.

18. All notices with respect to the Demand should be sent to:

Lehman Re Ltd.  
c/o PricewaterhouseCoopers Ltd.  
P.O. Box HM 1171  
Hamilton, HM EX, Bermuda  
Attn: Alison Tomb  
Telephone: (441) 299-7686  
Facsimile: (441) 295-1242  
Email: Alison.tomb@bm.pwc.com

with copies to:

Cadwalader, Wickersham & Taft LLP  
One World Financial Center  
New York, NY 10281  
Attn: Ingrid Bagby  
Telephone: (212) 504-6000  
Facsimile: (212) 504-6666  
Email: Ingrid.bagby@cwt.com



**LEHMAN PROJECT FRAMEWORK**

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**Business Requirements Document**

**GCCM**

**Module One**

**Disbursements and Receipts**

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BRD

LEHMAN BROTHERS

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## 1. Version History

Version	Primary Author(s)	Update	Date
1	Philip Duggan	Initial Document	22 July 04
1.1	Philip Duggan	Completed first draft	27 August 04
1.2	Philip Duggan	Clarifications to certain items	9 September 04
1.2a	Philip Duggan	Resave as 1.2 corrupted	10 September 04
1.3	Philip Duggan	Further clarifications and extra sub-sections	15 September 04
	Nancy Chuen	Inclusion of status tree	
1.3a	Philip Duggan	Resave as 1.3 corrupted	28 September 04
1.4	Philip Duggan	Slight flow change	03 November 04
2.0	Philip Duggan	Completed second draft	03 November 04

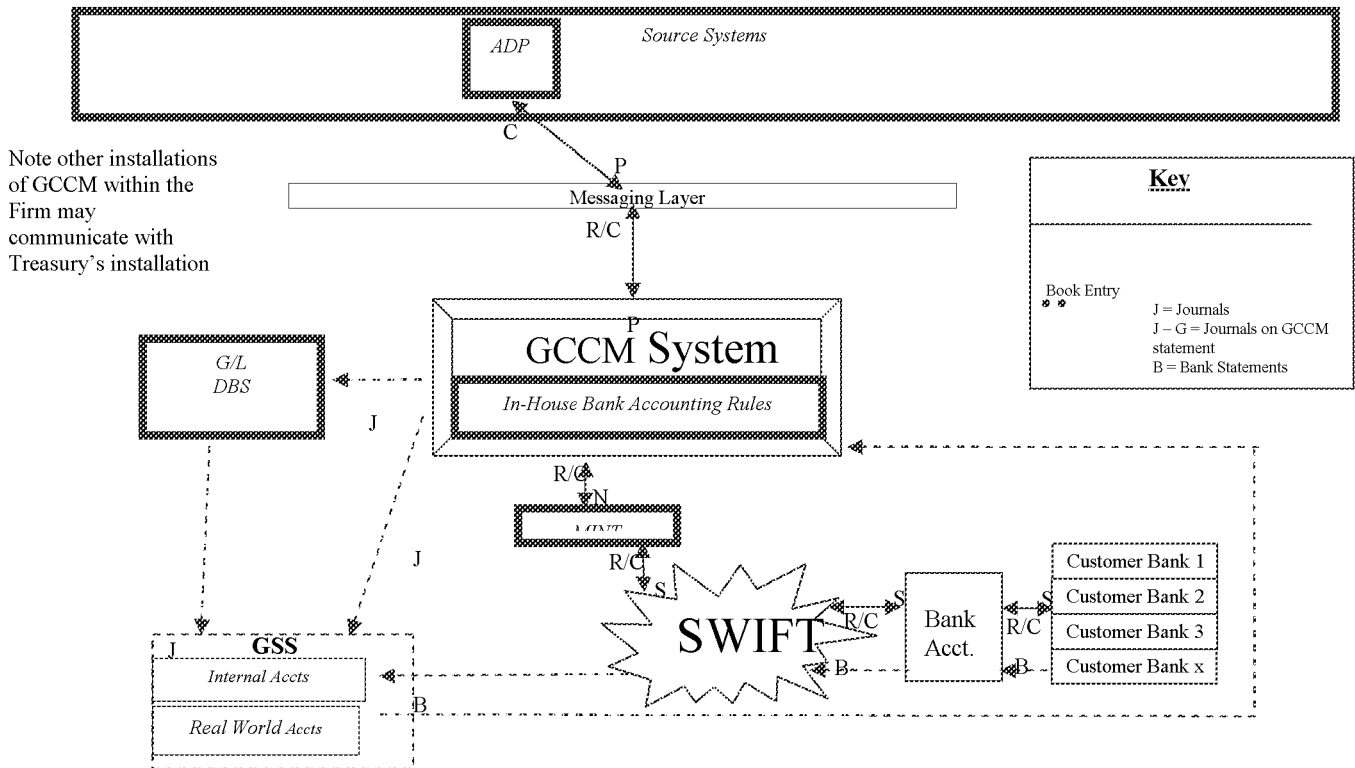
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## 2. Management Summary

GCCM Disbursements & Receipts will centralize and internalize, where possible, all of the Firm's cash flows. To that end, the system will be inclusive of all known payment activity globally, while designed with sufficient scalability and flexibility to incorporate new activity with little effort. It forms part of a larger development to create a global cash and collateral management tool for the Firm.

### 2.1. Graphical Representation – GCCM D&R



The premise of the design is that all payment activity including preadvice notifications from feeder systems will be sent to D&R for processing and each nostro account owned by the Firm will be hosted on GCCM so that CCM have the ability to manage intra-day liquidity across all entities from one consolidated view.

D&R is not intended to replace or decommission existing payment systems, though it may enable this to occur, rather it is a centralization tool for Treasury that will intermediate between existing OTG systems and the Firm's nostro agent banks. The feeder systems in use today will remain intact and will continue to provide the security, input and approval functions that they do today. The key difference is that CCM staff will no longer operate on these systems.

GCCM is to be designed so that it has the scalability to absorb new internal systems, acquisitions, new businesses / legal entities and additional currencies while interfacing with a number of payment channels including a cheque process. Moreover it will have the flexibility to cope with the Firm's existing convoluted payments and funding structures. It is to be based around extensions to standard SWIFT formatting conventions for cash messages to allow for other disbursement options and is expected to be an open platform, with data available for querying that will serve as a resource for the Firm.

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### 3. Project Scope

The following chapter outlines the basic structure of GCCM and Module One of GCCM, Disbursements & Receipts in particular. The workflow referenced in the following document can be found in appendix 10.1.

#### 3.1. GCCM Structure

GCCM is a web deployed tool designed to control the Firm's cash payment and nostro account funding processes. The proposed structure of the system is shown at the start of Appendix 10.1.1. It contains three distinct sections

- ◆ **Module One: Disbursements and Receipts** (roll-out to begin November 2005)
  - ◆ A central payment processing system.
  - ◆ An in-house bank settlement model to internalise payment traffic and nostro bank accounts.
  - ◆ Aggregation of all cash flows for funding of individual cash nostro accounts.
- ◆ **Module Two: Liquidity Management** (roll-out to begin late 2006)
  - ◆ A dashboard to monitor and predict the intraday and end of day funding requirements of securities depots.
  - ◆ Integration of real-time cash and collateral positions and same day trading activity.
- ◆ **Module Three: Liquidity Forecasting** (roll-out to begin late 2007)
  - ◆ Tactical / short term liquidity forecasting based on extensions to Liquidity Management
  - ◆ Projected cash and collateral availability.

This BRD outlines the workflow and functionality for Module One. In particular the following chapters will walk through key workflow steps of Module One in detail.

#### 3.2. Disbursement & Receipt Structure

Within Module One, the system contains:

- a payment processing function,
- an accounting function that contains the rule set for the in-house bank,
- on-line real time reporting for a limited time horizon (nine days forward and five days history),
- on-line historical reporting with a 25 month time horizon.

Beyond 25 months summary level details will be available via a separate archive database (accessed through Business Objects) containing up to 5 years worth of data and by recall of the back-up database tapes.

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The Payment Processing function contains three basic steps:

- Import of the request to pay or receive funds,
- Validation of the information sent with the request to ensure that the request can be settled and identify items that can be settled internally without a physical cash movement,
- Release of the request externally to the most optimal payment channel to minimise the Firm's external costs.

These steps will be outlined in chapter 4 and can be referenced in Appendix 10.1.2. The on-line real time reporting options will be covered as part of the accounting funding requirements in the payment processing function.

The Account function contains a number of processes to generate and record the accounting associated with the funding and settlement of the cash requests. These are:

- Generation of accounting per request
- Start of Day and End of Day processes to ensure integrity of data and generate intercompany interest
- Monthly End processes to recover interest and fee expenses for the settlement of cash processing.

These processes will be outlined in chapters 5.

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## **4. Payment and Receipt Processing and Account Balance Reporting**

### **4.1. *D&R: Detail of Payment Import Control Processes - Ref 1.1***

The following chapter outlines the steps involved in importing data into GCCM D&R and exporting information from the system. A flow chart and table showing the various stages that a request goes through as it is processed is available in Appendix 10.1.2.

GCCM D&R will be a real time based system, accepting individual message representing a single payment or receipt request, and multi- thread these requests so that the platform can cope with a volume spike of 50,000 requests per hour. In turn the system should predominately release external requests real-time to the communication channel, e.g. SWIFT, chosen to send the individual request for settlement.

#### **4.1.1. Process Name: GCCM Gateway – Ref 1.1.1**

The Gateway will be used to pass messages between GCCM and other Lehman system. It will write data sent from a message generating system into the GCCM extended format and pass to GCCM Import function. In addition it will be responsible for routing messages from GCCM to other systems and controlling access to the data stored with GCCM.

##### **4.1.1.1. Basic Process Flow Incoming Requests, Internal Source – Ref 1.1.1.0:**

This section covers the main function of the Gateway which is to handle the Firm's cash settlement activity that arises as a result of the Firm's trading positions.

A number of source systems will feed cash instructions to GCCM D&R. It is expected that payment requests and preadvice notifications will be received into GCCM D&R from (at the least): RISC, ASAP, ADP, FPS, Treasury WorkStation Summit, Loan IQ, CTS, ITS, EFCash, and Walker AP/ R&R.

In addition it is envisaged that the GCCM Gateway would also be able to accept messages in a SWIFT format from MINT to allow traffic to be routed via MINT from internal systems or even via SWIFT for future acquisitions or business development. To allow for manual messages a web based interface will also exist that can upload payment request in bulk via a file transfer process, see section on manual input.

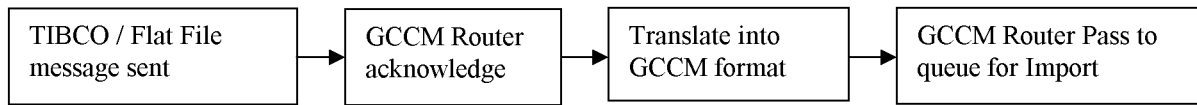
Note that on the flow chart Ref 1.1.1.1, OTG Traffic represents the systems listed above supported by Operations Technology Group and Finance traffic refers to Accounts Payable and Payroll activity. MINT is represented separately as Ref 1.1.1.3. TWS Summit is also noted as Ref 1.1.1.2 as this system to avoid confusion with the current TWS based Funding Hub model. The detail of each of these systems will be followed up in separate documents at the next stage in the system specification process.

Traffic released from a source settlement system or the GCCM Web based manual input process, Ref 1.1.1.4 in the diagram, will flow through to a TIBCO based router or Gateway / Adaptor function. Flat files submitted to GCCM should be read and converted into individual TIBCO messages by the Gateway.



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To ensure integrity of the Firm's payment architecture, the GCCM Gateway should authentic each originating system and acknowledge receipt of each message. Messages into and out of GCCM should be encrypt as per the Firm's current standards wherever feasible.

The Gateway will be responsible for standardising and depersonalising the messages from the source systems – for example field names, message structure, etc but will not review the content of the individual fields of each message. Specifically SWIFT code words and flags (A / D formatting) may need to be recognised to allow for source systems that send 'full formed' Swift like messages to GCCM and treated accordingly. The data should be split into the maximum number of fields and all information sent should be retained even if it is not subsequently used.

The Gateway will have responsibility for routing the traffic to the appropriate import queue for GCCM D&R, Ref 1.1.2.1 in the diagram. The function will need to pass items to a series of queues with the least payment traffic for the urgency flag set on the message.

After processing the GCCM Gateway will inform the source system that the received message has been passed to the next stage in the process. Note that at each stage in the D&R process, GCCM should publish status information via TIBCO but it will remain the source systems' responsibility to read this data.

#### 4.1.1.1.1. Required Information to generate a GCCM database record:

As a minimum the following information must be contained in the messages sent to GCCM for it to generate a payment or preadvice record.

Field	Character	Comments
System id		
System unique ref		
Time sent from System		
CCY		
Amount		
Value Date		
Business Account payee/ Receiver		
Debit / Credit indicator		
Beneficiary account		Could be GARM id, GCCM Account number or 3 <sup>rd</sup> party account id.
GCCM unique id		
GCCM status & version		

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4.1.1.1.2. Optional Information to include in a GCCM database record:

The following information can be contained in the messages sent to GCCM for the booking of payment or preadvice requests.

Field	Character	Comments
Mandatory Swift fields		
Optional Swift fields		
Other additional Info		
GARM id		
Message type		
Message priority		
Legal entity		
User who input		
User who authorised		
User who authorised 2 / released		
Internal only movement flag		
GCCM user amendment		
GCCM checks status		
Provisional Figure Indicator		
Payment to be held		Payment can only be released manually regardless of if it is to be settled through an auto release payment queue
Beneficiary's Address details		

4.1.1.1.3. Notes

1. TIBCO, MERVA / MINT and SWIFT all allow process flags to be set. GCCM will need to accept and potentially prioritise traffic based on these flags.
2. GCCM Gateway queues will be system specific but GCCM Import queues should not.
3. The GCCM Gateway may need to include a mapping table that turns source system data into GCCM appropriate data, as TWS Payment Import currently maps ASAP traffic to a TWS code.

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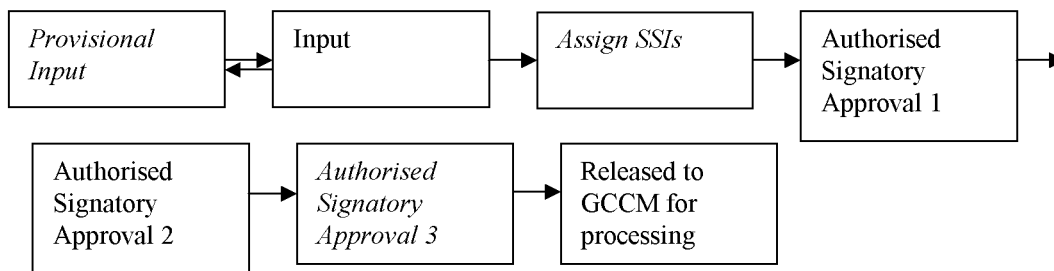
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#### 4.1.2. Process Name: Manual Cash Transfer Input - Ref 1.1.1.4

While most traffic will be created in settlement systems, manual traffic will remain. The following section outlines the process required to allow the input of such messages into GCCM

##### 4.1.2.1. Basic Process Flow: Web Input Function

Users will be expected to login to the GCCM D&R function where they will be able to select the ability to input cash messages. Note that user access to this function will be restricted and dual control requirements will exist for all messages input via the web page.



Status in italics may occur only at system level

*To maximise the BCP nature of the core GCCM D&R function, this manual entry process will be consider non-core and is effectively another feeder process to the core of GCCM. In essence the manual input function will be a separately application that can fail without affecting other parts of the D&R system.*

As a result once a message has been 'Released to GCCM for processing', it will be sent to the Gateway where it will be treated as any other source system and amendments requests will need to pass through the Gateway as the record that will be released will reside in a separate database.

It is expected that the web input process will allow both direct input and batch upload from say an Excel or CSV file to allow groups with large number of transaction request but no automated feed to input multiple requests simultaneously. This process will also be available as back-up option should an event occur to a TIBCO linkage between one of the source systems and GCCM.

##### 4.1.2.1.1. Tracking Information automatically added to record

As part of each record created via the web input function the following audit information will be retained.

Field	Character	Comments
Version Date and Time		
User		
Version		Version of message
Status		Status in version
Payment Ref		Uniquely generated by system – does not change
Security Code		Unique check sum created at release to GCCM. To be used for authenticity.

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The following sections outline the options available to users via the menu from the web input function.

#### 4.1.2.1.2. Provisional Input / Input

Once a user has decided to create a manual request and has accessed the input function, they will be presented with a basic menu giving them the ability to create a new request from scratch or a new request from a predefined Template. Note access to templates will be restricted at the user level to users within the same control (Operations) group.

New Requests all start in a Provisional Input status.

##### 4.1.2.1.2.1. Required Information:

As a minimum the following information must be completed in the New Request screen for the Input function to generate a payment or preadvice record.

Field	Character	Comments
Ordering Internal Business Account Number		Account to be debited or credited
Currency	3 code	
Currency Calendar	3 letter city code	Added once CCY input automatically
Amount	Up to 1000 bn	Debit indicates payment Credit indicates receipt
Value Date	Format should be as PC in use	4 char year Back valued inputs to be allowed
Beneficiary Account Number		Not a required field but user should be able to add GARM account number or GCCM account number If debit amount then this is where payment goes If credit amount then this is where funds are expected from - re credits see later
Users refs	Text	If supplied append to posting info and message
Additional Info	Text	If supplied append to posting info and message
Payment Urgency	Defined list	Only available to certain users?

##### 4.1.2.1.2.2. Identifying Beneficiary Details

To support users that may be not be able to supply details of the GARM id of their client, for example as they are familiar with their client's ADP or RISC accounts numbers only, D&R should allow users to

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initiate a search of GARM to identify the correct GARM id using the account numbers from one of the other settlement systems.

#### *4.1.2.1.2.3. Restricted Accounts*

Note that there is a concern about whether users should be able to create payments for all GARM ids, in case GCCM D&R could be used as way to by pass the correct margin approval processes for customer accounts. Therefore it may be that after consolation with the appropriate groups users may not be able to input payments against certain account ranges / GARM ids and instead users will be directed to process through an alternative system.

*Open question:* need to check with GARM that clients that need margin approval are contained within limited ranges rather than spread through the system; if not how do we identify clients?

#### *4.1.2.1.2.4. Available Actions*

Once user has input a basic request they should then be able to save the message into:

- A Provisional status with only certain checks being carried out,
- An 'Input Complete' status.
- New Template
- Or Cancel the message

As part of the process for saving a message into an 'Input Complete' status certain basic checks will be carried out (the basic checks are included in the notes below). Items that fail a check should go a Require Repair status and a note should be made available of why the item failed.

In a Provisional status the message can be amended and the user can then save the message into a Provisional status with only certain checks being carried out or into an 'Input Complete' status. A message can go through Provisional Input a number of times.

Items in a Require Repair status can be amended by the same user who input the message.

'Input Complete' is action undertaken by the user and in background the status should move to Assign SSIs if the request passes the data checks.

No further action can be carried out on a Cancelled Message.

#### *4.1.2.1.2.5. Template Required Information:*

When a New Request is saved as a template then the following additional information is required to control access to the template going forward:

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Field	Character	Comments
User Name or Ref		Along with CCY provides unique id for users
System Unique id		Generated by system
User Group	Defined list	Default to same as User
Comment / Template Group		Available to users to add comments to be able to identify groups / sub-sets of their templates by

#### 4.1.2.1.3. Message Retrieval for Further Action

To allow user to update messages then they will need to recall a message from the database.

To recall a request users will Open the request using either the trade id or via a filtered list. Options for the filter should include:

- All
- All from Template
- All from User Group
- All in CCY
- All in Account
- All in Status
- A combination of Template, User Group, CCY, Internal Business Account, Status
- Value Date
- Amount
- Beneficiary

The expectation is that users will only want to see items not released to GCCM at this point but they should be allowed to select a flag that would allow them to include items already processed.

#### 4.1.2.1.4. Assign SSIs

##### 4.1.2.1.4.1. Auto-completion of SSI data

If a GARM id or a GCCM Internal Business Account number has been added as the beneficiary of the request, the system will recognise this and either retrieve the SSI data for the beneficiary from GARM or note the presence of the GCCM account number (in this case SSI data would be available in the core function part of GCCM D&R and so is not required at this stage).

It has been suggested that D&R should review the account numbers versus GCCM D&R records prior to checking the account number with GARM to complete the SSI data.

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In either case the message will automatically move to the next internal status, which is Pending Approval. (The version tracking information will update as to reflect this automatic update).

*4.1.2.1.4.2. Manual completion of SSI data*

If the beneficiary GARM / Internal Account fields were blank at the input stage then the message will remain in an Assign SSI status until recalled by user and the relevant details completed. The necessary and available fields should be based on SWIFT message fields.

In this status users cannot update a field input at an earlier stage and so they should Reject the message or save into a Provisional Input stage if they need to amend a non SSI field.

*4.1.2.1.4.3. Required Information: -*

The following information will be required (the exact options will be confirmed as part of the next level of system specification):

Field	Character	Comments
Ordering customer		
Payment Type		103, 202, Cover or 210 say
Intermediary	BIC code	If BIC is not used then FW, SC or equivalent should be present
Account With Bank	BIC code / Text	If BIC is not used then FW, SC or equivalent should be present wherever possible
Account Holder	Text	
Account Number	Text	
Charges	3 letters	BEN / SHS / OUR
Additional Info for Swift Message	Text	

Once user has assigned detail or if they wish to amend details they cannot edit, they should then be able to save the message into:

- A Provisional status with only certain checks being carried out,
- Pending Approval status.
- New / Updated Template
- Repair
- Or Cancel Input

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#### 4.1.2.1.5. Approve Message

Users should be able to recall messages as above for approval and while they cannot amend data they should be able to review all details.

Once the authorised user is satisfied, they should then be able to save the message into:

- 1<sup>st</sup> Stage Approved status.
- Repair
- Or Cancel input

##### 4.1.2.1.5.1. Preadvice Notifications

For credits to an account (Preadvice) at this point GCCM will need to review the static data on the quoted account to determine if further level(s) of authorisation is (are) required. If not, then the message should be transmitted / passed to core GCCM process and the status updated to reflect this.

In turn the second approver should be able to recall and review the message. Once they are satisfied they can then save the message into:

- 2<sup>nd</sup> Stage Approved status.
- Repair
- Or Cancel input

Note to promote the use of preadvice notifications in the US to add intraday forecasting and to simplify matching of incoming funds to an Internal Business account, D&R should allow for either:

- the auto-approval of preadvice notifications for a limited range of Internal Business accounts
- or the user who input the notification to also approve the notification

If agreed then this process would be the only allowed exception to the principle of four eyes review of every request (that is at least one inputter and one approver for every request).

##### 4.1.2.1.5.2. Payment Requests

For all payments, the input requested should await at least a further level of approval.

In turn the second approver should be able to recall and review the message. Once they are satisfied they can then save the message into:

- 2<sup>nd</sup> Stage Approved status.
- Repair
- Or Cancel input

At this point GCCM will need to review the static data on the quoted Internal Business account to determine if a further level of authorisation is required. If not, then the message should be transmitted / passed to core GCCM process and the status updated to reflect this. Otherwise the message should await further approval.



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In turn the third approver should be able to recall and review the message. Once they are satisfied they can then save the message into:

- 3rd Stage Approved status.
- Repair
- Or Cancel input

At this point GCCM should be transmitted / passed to core GCCM process and the status updated to reflect this.

#### 4.1.2.1.6. Payments Rejected by GCCM Import process

It is possible, depending on the build of the core D&R module, that requests may be rejected by the GCCM import approval process. The core module will then attempt to return the requests to *the appropriate source*.

For messages input using the web browser this would be the GCCM manual input process. If this occurred then the message should go back to a repair queue where the initial core and SSI data can be amended. Once repaired the message should go into a Pending Approval status. (Each approval stage that the original message went through will need to be repeated though the user approving does not have to be the same at each stage.)

After the approval process has been completed, the amended message will be distributed back to the GCCM Gateway.

#### 4.1.2.1.7. Notes

1. The screen for payment input should be web based and accessible through Lehman Live.
2. Only pre defined users should be able to input / assign / approve / save as template a message. Input / Assign users do not have to be Authorised Signatories but Approvers must be.
  - a. Authorised Signatory lists are tracked through the Treasury Signature database and this approval process should validate against the list in the database daily.
3. Users will be defined against a range of Internal Business and external nostro accounts so if they quote one they have no access to then this should reject
4. Copies of each version should be stored
5. Inputs saved as Templates do not require a value date and can be assigned a name or ref by the user.
  - a. Templates may have SSIs assigned but these cannot then be amended
  - b. Templates can be restricted to certain User Groups
6. Check should occur whether request is back valued or not and this should be flagged to user and they approve second time
7. Assumption is that back valued flows are allowed so we would generate external Swift message and also generate 299 requesting value
8. Check should occur that the Internal Business account and currency are valid combination
  - a. *Open question do we allow cross-currency inputs? If so then we need a process to 'get rate' and process correct accounting*
9. Check should occur that currency and value date are valid combination vs. currency calendar

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- a. If not but an alternative calendar exists for the currency then the users should be allowed to override.
- b. The check should then be repeated
10. Check should occur that currency and value date are valid combination vs. currency funding deadline. Override should be allowed by flag later for CM additional approval
11. If Beneficiary or Ordering Party Account Number blank input cannot be saved for current or future value dates to release status. Must go to a pending SSI assignment status.
12. A message cannot stay in an unapproved status indefinitely, so an automated clean process should start after 2 or 3 days (make flexible) which puts message into a Cancel status.
13. Certain fields will require search facilities to allow user to find the correct record. These include Account Number, CCY, CCY Calendar and BIC code.
14. Message should appear with unique reference from 'manual input' database as separate unprocessed / un-accepted activity on internet statement of Internal Business account but not be sent to GSSR / paper statement until accounted for
15. It is not expected that more than three levels of authorisation of a message will be required, but should we allow for this?
16. Messages should be passed by TIBCO to GCCM core module
17. The input module should allow projection figures with the appropriate flag set to be passed to GCCM. To get around system restrictions could we consider using code word Projection in Beneficiary account field

#### 4.1.2.1.8. Bulk File Upload

As noted before it is expected that the web input process will allow both direct input and batch upload from say an Excel or CSV file to allow groups with large number of transaction requests but no automated feed to input multiple requests simultaneously.

For users to be able to load a file of completed payment instructions including SSI data into D&R, a load function should be available on the new payment screen. The function should allow users to browse their network connections to find the file of payment and receipt requests.

To prevent users accidentally loading the same set of payments twice, the file of requests should include at least a unique reference for a series of requests (a series of request could be the entire file of messages) or preferable a unique reference per request. This unique reference field should be stored along with each payment request created. The file should then be retrieved by GCCM D&R and should then attempt to create a series of new requests based on the data supplied. As a first step in this process the unique reference field should be compared with the reference already stored. Any requests containing a reference that has already been used should be flagged back to the user and should not create a request.

All messages should go into the same state as if they had been input manually into the web input function.

##### 4.1.2.1.8.1. Bulk Approvals

Should D&R allow users to highlight a number of requests and approve these simultaneously or should each request be approved individually?

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#### **4.1.3. Other Messages Processed by Gateway: Incoming Requests Other and Outgoing Messages:**

The following types of records will need to either be pulled in or sent to GCCM to allow it to calculate and accurately reflect the balances and entries through real world nostro accounts

##### **4.1.3.1. Daily Balance Report from GSSR or MT950s – Ref 1.5.2.1**

Each day to be able to track the actual start of day balance on an external nostro account and to use this to calculate the expected / projected end of day balance from this number, GCCM will need to source the balance data on each nostro account.

This could be done either from the individual original statements sent into the Firm (via SWIFT) from the various Agent Banks or it could be by allowing GSSR to first process the statements and then extract the balances from GSSR.

Note currently GSSR does not segregate or flag real world accounts differently to internal only reconciliations. Therefore as part of the processing the balance file will need to be filtered and only the real world balances extracted.

This is currently done manually by keeping a separate record of all GSSR accounts and identifying them as internal or external with CCM. This has the slight advantage that every time a new reconciliation is set-up in GSSR it is flagged to CCM straight away but is significantly time consuming.

##### **4.1.3.2. MT900, 910 or equivalents from payment channels – Ref 1.3.3.1**

To be able to track the settlement of payments and receipts across the Firm's various nostro accounts intraday and allow time to follow up on fails, GCCM needs to be able to:

- track and match incoming confirmations of activity from the banks by nostro account
- then update the status of the individual records in GCCM

While a variety of confirmation processes exist including phone and bank website, GCCM should be able to cope with at least the Swift standard MT900 and MT910s and in the future the Chase / Citibank proprietary feeds or the Cable and Wireless XML feed. The Gateway will need to take the incoming data and convert into a format that can be read by the GCCM Matching process to match the confirmation with the underlying item.

##### **4.1.3.3. Reconciliation Postings – Ref 1.1.3.1**

After the Firm's has reconciled its nostro accounts a number of postings (to clear unpre advised, fees etc) are always identified for posting after value date. Once GCCM is live these postings will need to be sent from GSSR into GCCM to true up the book closing positions with the real-world balances for the nostro accounts.

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These entries could either be automatically feed from GSSR or (more likely?) via an Excel file. If via an Excel file then items should go through web-page file upload process.

#### **4.1.3.4. Query and Response Traffic**

To minimise the workload that will be imposed on the GCCM database at any one time, no direct access should be allowed to the database. Instead all incoming data requests that would involve a call of the database should be 'filtered' by the Gateway to ensure:

- Queries are structured in the most efficient manner for the database
- To prevent large data calls slowing performance
- To hold queries back so that payment processing usage takes priority at key points of the day or if processing has been slowed below an agreed performance level.

#### **4.1.3.5. Outgoing Traffic**

The Gateway will be responsible for managing the connectivity between GCCM and the Firms other systems and will need to be able to process the following (a number of these steps are dealt with more thoroughly later in the BRD):

##### **4.1.3.5.1. Acknowledgements to Source Systems**

For each message request that comes into GCCM D&R an acknowledge needs to be sent back to the originating system confirming receipt and all status changes through the lifecycle of the instruction. The exact formats of the acknowledgements will be specified as part of the next stage of the system specification process.

##### **4.1.3.5.2. Repair messages**

For systems that can take in and handle items that require repair, the Gateway should convert the instruction from the GCCM format into the appropriate format for the system that original generated the request.

Also where items are to be pushed back out to an individual for repair, GCCM should request an email is sent notifying the individual of the fault via the Gateway. If possible the Gateway generated email should either link back to the underlying item or to the repair screen.

##### **4.1.3.5.3. GARM – Ref 1.1.2.2**

GCCM D&R will communicate with GARM to source Standard Settlement Instruction (SSI) data for requests that have been sent with a client GARM id rather than complete SSI data.

Longer term it is possible the GCCM D&R will be updated to validate all SSI data sent to it against the records held for a client in GARM.

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4.1.3.5.4. Payment channel messages

Once an item has been released from the Intra-day Release queues, GCCM should pass it to the Gateway for onward processing. The Gateway should strip out any extraneous information that is part of the GCCM but is not required for the payment channel.

The Gateway should then authentic (and encrypt) the individual message or file and pass to the indicated payment channel via the most appropriate methodology.

4.1.3.5.5. Statements to GSSR – Ref 1.5.3.1

Each account within GCCM should be set-up so that a copy of the entries across it can be passed to GSSR for reconciliation. As much information retained about an individual record on an account in GCCM should be sent to GSSR.

GSSR would then be responsible for taking in as much as it can handle.

GCCM should also be to create formal Swift MT950 messages.

4.1.3.5.6. Accounting entries to DBS – Ref 1.5

As part of GCCM purpose is to host the in-house bank, it will be a sub-ledger and as such will need to deliver accounting entries to DBS on a daily basis. The Gateway will be responsible for taking the accounting journals created by the in-house module and delivering them to DBS in the most effective manner.

It is hoped that this can be done intraday by leveraging the sub-ledger work being undertaken by Finance. Further details on accounting are available in chapters 7 to 9.

4.1.3.5.7. Interest accounting entries to GID / Debt Database – Ref 1.5.3.7

In a similar way to DBS, as part of GCCM purpose is to host the in-house bank, it will be a Treasury sub-ledger and as such will need to deliver accounting entries, such as those related to intercompany interest P&L, to the GID (Debt Database) on a daily basis.

The Gateway will be responsible for taking the accounting journals created by the in-house module and delivering them to the GID in the most effective manner.

4.1.3.5.8. Automated reports

GCCM is likely to have some automated reporting functionality based around queries to the reporting database with certain reports generated by GCCM emailed out to users.

GCCM should send an email notifying the agreed distribution of the report via the Gateway. If possible the Gateway generated email should either link back to the underlying report or to the Lehman Live deployed version.

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#### 4.1.4. Process Name: GCCM Import – Ref 1.1.2.1

To write data sent from the Gateway to the GCCM core database.

##### 4.1.4.1. Basic Process Flow of Import Function

Once a message is in a GCCM Import queue as a result of being accepted by the Gateway, the message should be read by the GCCM Import function.

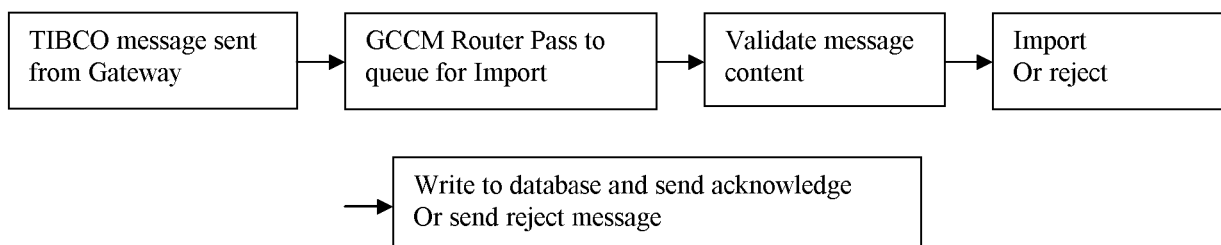
The import function should have active management of the queues; processing items that come into an urgent queue for an open currency window first whereas items that are flagged as internal only traffic by the source systems can be held back to be processed during quiet times. Multiple queues should work in parallel.

The following is a suggested processing prioritisation:

1. Urgent
2. Items of currency with next funding deadline
3. Items with value date today
4. Items with forward value
5. Internal items

As part of the Import function GCCM should initially validate a message to ensure that sufficient information has been sent by the source system to generate a database record. If a message fails this process, then GCCM should send a rejection notice back to the source system.

If the message passes GCCM should create a message in its database in a Pending Processing status and create a unique ref for the message. The unique ref should be passed back to the source system



##### 4.1.4.1.1. Required Information to generate a GCCM database record:

Field	Character	Comments
System id		
System unique ref		
Time sent from System		
CCY		
Amount		
Value Date		

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Business Account payee/ Receiver		
Debit / Credit indicator		
Beneficiary account		Could be GARM id, GCCM Account number or 3 <sup>rd</sup> party account id.
GCCM unique id		
GCCM status & version		

4.1.4.1.2. Optional Information to include in a GCCM database record:

Field	Character	Comments
Mandatory Swift fields		Including Travel Rule info
Optional Swift fields		
Other additional Info		
GARM id		
Message type		
Message priority		
Legal entity		
User who released		
Internal only movement flag		
GCCM user amendment		
GCCM checks status		
Posting Date		Date item is shown in cash-flow
Effective Date		Date sent to system
Provisional Figure Indicator		

4.1.4.1.3. Message Warehousing

The system should allow messages to be received nine working days forward of the value date required; that is if today is 1<sup>st</sup> October the system should accept requests for forward value up to the 14<sup>th</sup> October.

These requests should then be warehoused on behalf of the originating system until nearer the value date at which point they should be generated into a pending release status for manual or automatic release, as appropriate for the external cash nostro, to the chosen cash settlement process.

External messages should be generated a set number of days in prior to value and not before; for example for a payment received on 1<sup>st</sup> value 14<sup>th</sup> for USD the external message does not need to be created on first but say on 13<sup>th</sup>. The period forward of value that messages should be generated should be set as part of the currency / external nostro account static.

The system should discount weekends and global holidays from its forward / back value date count but if at least one currency is available on a day then that day should be counted as a working day for the system and so contribute to the days maintained on the system. For example 25 December is a valid value date for JPY (assuming it does not fall on weekend) and so the system should be open.

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4.1.4.1.4. Notes

- TIBCO, MERVA / MINT and SWIFT all allow process flags to be set. GCCM will need to accept and potentially prioritise traffic based on these flags.
- GCCM Gateway queues will be system specific but GCCM Import queues should not.
- It should be easy to add further Import queues and there should a load bearing function that takes allowance of incoming priority and waiting times (1/lamda).
- A rejection could, for example, occur if the debit Internal Business account number quoted does not exist in GCCM.
- GCCM should allow source systems to send amendments or even cancellations down to GCCM by quoting the GCCM / their unique reference for a request. Need to be specific on controls to prevent duplicate records being created and point at which a change becomes irrevocable.
- ALM would like to include the possibility of source systems sending Provisional or Forecast numbers through to GCCM to be used within the forecast process. To handle this it is proposed that a Provisional Figure flag can be sent as part of the message from a source system. If this is set to yes then the GCCM record should be created but saved into a Provisional Figure status. These numbers would then appear in the appropriate currency balance in a Provisional Column but would not be passed through the STP, Settlement or Accounting Engines of GCCM.



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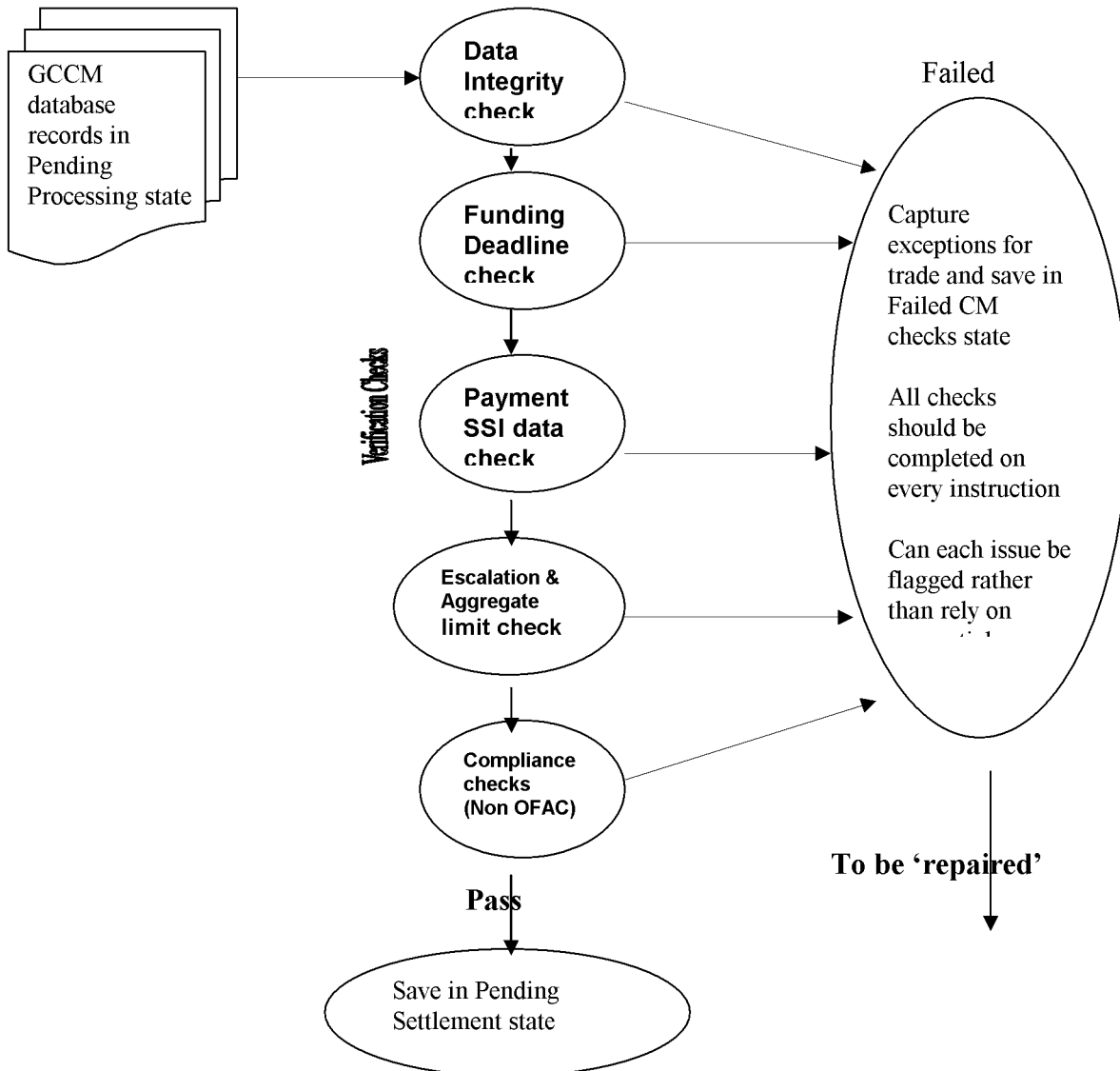
#### 4.2. D&R: Detail of Message Content Validation (STP Engine) – Ref 1.2

To review the content of the information supplied by initiating systems to ensure that message can be funded and settled STP before creating accounting and any external message traffic.

##### 4.2.1. Basic Process Flow for STP Engine – Ref 1.2.1

Once written the GCCM core database in a Pending Processing state, the message should be passed through a series of checks before being authorised and passed to the next stage Pending Settlement. The initiation of this validation should be automatic and run continuously with multiple messages being checked in parallel. Items that fail one or multiple steps will need to be ‘repaired’ and notification of this will need to be passed to the source system

This is a high-level overview of the proposed flow (based on the London AVE model).



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Each of the checks above will be laid out in their basic form in the following subsections; however the system should be able to deal with the adding of rules to the individual validation processes, the addition of further validation processes or the re-engineering of a validation process in an easy to implement way.

If possible a graphical user interface should be created to allow creation / amendment of individual rules. (It is expected that the re-engineering of a particular validation process would involve technology support.)

All the checks should be undertaken on each request altogether; that is each request should be validated against each check in the process once the request is selected by the STP Engine and the results of all the checks should be presented together. Requests that pass every check should move to the next stage of the payment process. Items that fail one or multiple checks should in general go to a repair queue and further processing halt. Failed items should still be reporting in the currency position numbers to ensure the Firm is correctly funded.

Note failure of a check does not automatically mean a message will be rejected just that it needs further analysis or processing. In general items that fail one or multiple steps should be saved into a Failed STP validation state. Specific fails such as Beneficiary is an Internal Business account will bypass certain GCCM stages and will be saved into the appropriate GCCM state.

How repairs are to be handled will be dealt with elsewhere, though it should be noted that once a repair is completed on a particular record, if that record is saved into a Pending Processing state then it will need to go through the checks again.

The payment channel that would be used to settle a transaction will be determined after this point and so the payment quality checks detailed here will cover the minimum requirements using Swift standards as a reference. As and when GCCM connects to other payment channels additional standards may need to be incorporated or rules amended to cope.

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#### **4.2.1.1. Process flow after the STP Engine**

Once an item has passed through the STP Engine (passed or failed), requests should be split between internal and external movements. Internal movements should be sent to the Accounting Engine for immediate processing while external requests should start to appear in the Currency Position report.

Initially external requests should appear in the unassigned nostro column however the system should automatically begin the process of assigning the request to an external account for settlement. How the system should choose the external account to be used is outlined in section 4.3, as is a description of the process of choosing between payment channels, should more than one opportunity exist, for the settlement of the request.

Once an item has been allocated to an external account, the request should appear in a Pending Settlement status if the request passed the STP Engine or a Pending Repair / Pending Approval column if the request failed one or a number of the checks.

Note if the Pending Repair / Pending Approval items are split into two columns then any request that has failed multiple checks such that the messages requires repair by the originator and approval by Cash Management should appear in the Pending Approval column only. (Once the approval(s) have been completed then the item could theoretically be moved into the pending repair column if the repairs were still required – CM could repair simple items without reference back to Ops. This process should happen automatically as a result of the request being resubmitted to the STP engine once it has been repaired.)

Messages that have been entered that are intra Lehman flows that must be settled via cash movements, for example nostro account funding movements, to be denoted by the coding FUND, will need to be processed in a manner that would minimise the physical cash settlements and also reduces the potential for intercompany exposures to be created. This will occur through the netting of payments between Internal Business accounts and the routing of net movements via the entity linked to the Business or Originating account that is responsible for the overall funding of the entity the originating accounts resides in. It is possible that to further reduce activity the STP engine should populate the SSI data based on Funding Entity linked to the originating account overriding any direct payments.

Finally to allow for further currencies becoming Euro In currencies in the future, GCCM D&R should auto convert payments or receipts in an in-currency once they have passed through the STP engine to their Euro equivalent. The system should input the payment into the Euro nostro account for processing and funding rather than an in-currency nostro (though it should be able to show the original in-currency transactions broken out if required) and send the instruction out noting the original currency amount.

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#### 4.2.2. Process Name: Data Integrity Check – Ref 1.2.1.1

To ensure that the basic information that has been sent to GCCM by a source system as part of a payment request or receipt notification is meaningful and can be used to settle the request. The data contained within the GCCM database should be passed through the following checks to ensure that it can be processed within the system.

Field (s)	Check	Response to NO
Beneficiary	Is this not a GARM Id present?!! If no then is SSI data supplied	If both no call complete SSI data from GARM. Additional details should then go through other checks.
Amount	Is less than 1	Flag as failed and note
CCY calendar	Is present and valid for CCY	Append default calendar code to record if one is already present or invalid
Value date	Is the date a valid business day for selected calendar	Flag as failed and note
Value date	Is it current or forward value date	Flag as back-valued entry but pass at this stage to be process differently later
CCY	Is CCY valid for quoted business account	Flag as failed – will either require changing or special FX processing
Internal Movement	Is this not an Internal Request	Step over to Compliance checks Auto-pass and route messages to accounting processes bypassing section 1.3
Originating Account	Is this marked as Seg. or SPV	Flag for careful processing later
Beneficiary	Is this not a Lehman Internal Business Account quoted	Flag as internal only movement (update a separate field) and step over to Compliance checks
Beneficiary	Is this not a Lehman External Nostro Account quoted	Flag as intra Lehman movement (update a separate field)– In particular need to be aware if this an internal payment that can be settled via in-house bank versus nostro account funding which must be moved
Beneficiary	Is this not the same as Ordering Account	If intra Lehman movement then flag as funding and pass. Otherwise fail and note

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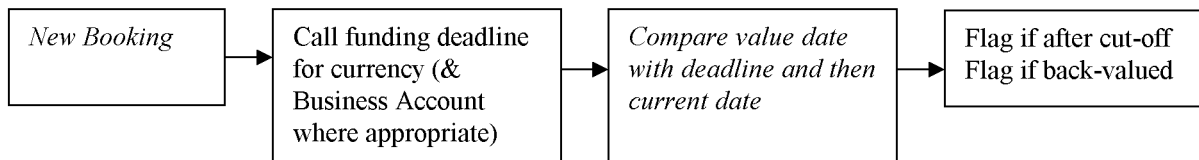
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#### 4.2.3. Process Name: Funding Deadline Check – Ref 1.2.1.2

To ensure all funding requests (outgoing real world debit or credit requests) requests can be funded and processed with value.

To check that for the currency of the requested movement the Firm can still economically funds the transfer. Any requests that are received by Cash Management after the funding cut-off are processed on a best effort's basis for the value of the funding request or paid on the next available value date.

Back-valued funding requests will require additional approval and processing.



GCCM should flag any funding requests that are received after a cut-off or if the request indicates a back-valued movement. As with the authorisation of Escalations, Cash Management only will have to either accept the funding request or change the value date of the request after referring to the originator of the request.

For back-valued requests, the value date of the request will be changed to the most appropriate value date to fund the transaction. The originator of the request should then receive notification of the change and a request to approve (via an email containing a web-link?) any costs for the back-valuation to the quoted value date. Once the back-valuation approval has been received GCCM should create a request to the appropriate agent bank that will handle the movement to back value the transaction.

##### 4.2.3.1. Funding Deadlines Table

It will be necessary to maintain a default matrix within GCCM (that is to be updated by CCM) which will list the currencies and the time funding cut-off in the form of a time (in Greenwich Mean Time, GMT) and day count.

For example:

TWD, S-2, 10:00

Where TWD refers to Taiwanese Dollars, S-2 is value date minus two working days, and 10:00 is 10:00 am GMT. Note the cut-off should be converted to the local time for the Cash Management users.

Also due to specific business requirements certain Business Accounts will be allowed to override the default cut-off and so the table will need to store the Business Account and its specific cut-off (in a similar way).

All funding requests input into GCCM should be assessed against this rule set/matrix and any fails reported to the verifier of the message.

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Note

- 1) Funding Requests generated by Cash and Collateral Management user groups should be exempt from the deadline checking process.
- 2) GCCM will be set-up to recover the costs of funding an item by going overdrawn or incurring late same day funding costs by imposing a one-off fee for each late request on the originating Internal Business account.

4.2.3.1.1. Extension to Funding Deadline table

Further to the simple table noted above, it has been discussed adding into the table the possibility of checking deadlines for specific payment channels in addition to the overall funding of a currency.

This additional checking would be used to determine of whether a particular request could be sent via the payment channel suggested by the formatting of the message / size of the request or whether CCM users should redirect failed items.

For example:

USD, S, 21:00, ACH

USD, S, 22:00, FED

Where USD refers to US Dollars, S is value date today, times shown are GMT and:

- ACH refers to Automated Clearing House
- FED refers to FED Wire

**4.2.3.2. Authorisation**

Unlike other repairs which will be handled primarily by non-CM users it is expected that funding deadline exceptions will only be handled with Cash Management. However handled the Verify process should record the verifying user's UserId, so that even if someone else subsequently amends the trade, it is possible to see who verified the escalation.

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#### 4.2.4. Process Name: Payment Quality Checking - Ref 1.2.1.3

To set up a table of rules against which all payment and receipt instructions would be validated against and either rejected or accepted.

**Note: This document use Swift standards as its reference. As and when GCCM connects to other payment channels additional standards may need to be incorporated.** The following is heavily based on the payment quality work undertaken in London Cash Management.

SWIFT message formats are generic globally and any breaches of compliance with the SWIFT message standards will be either rejected by MERVA, the firm's SWIFT interface, or rejected by SWIFT through a negative acknowledgement (NAK). However, SWIFT standards can allow free format text in fields within the message, the use of incorrect account number or clearing code structures<sup>1</sup>, the omitance of optional fields that may be required in some cases, etc. The fact that messages can be structured with non-generic data means that correspondent bank's systems may not be able to process the payment automatically. Over time the rule set will be expanded to address the nuances in different countries, clearing systems and in some cases banks.

Payment channel and correspondent bank specific formatting will be taken care of at the point the outgoing message from GCCM is created. This will be covered in later in the document.

To speed up the development and implementation process the message and currency rule sets will not be exhaustive as to cover every conceivable issue that may cause a message to fall into repair. Therefore, the table that contains the rule sets should be able to readily accept additional criteria.

Figure 1 shows the fields that need to be checked for payment quality. Note at this stage it is not intended to develop significant quality analysis on MT210 messages.

Figure 1

Fields	Definition	MT103	MT202
50:	Ordering Customer		n/a
52:	Ordering Institution		n/a
53:	Senders Correspondent		
54:	Receivers Correspondent		
56:	Intermediary Bank		
57:	Account with Bank (Beneficiary's bank)		
58:	Beneficiary	n/a	
59:	Beneficiary		n/a
70:	Information for Beneficiary		n/a
72:	Additional payment details		

<sup>1</sup> All SWIFT bank identifier codes (BICs) are validated by MERVA before transmission to SWIFT.

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The field numbers 50 through to 59 detailed in Figure 1 should be represented in GCCM via a BIC field and a free text field equivalent to A or D formatting. For record keeping GCCM should be able to have generic field names to prevent duplication at this point, as this specific formatting may not apply for each payment channel available to GCCM; for example GCCM will not need to store fields 58 & 59 separately.

Note to cover all eventualities fields 70 & 72 should be stored separately.

#### **4.2.4.1. Rule Set**

The following are the main rules, from a SWIFT perspective, that need to be applied to ensure a minimum level of payment quality to enable our correspondents to process most payments cleanly without repair.

##### **4.2.4.1.1. Rule 1**

If message type is not defined, then check beneficiary field. If this contains a BIC then set message type as MT202 otherwise set message type as MT103.

##### **4.2.4.1.2. Rule 2**

Ensure that no characters that are restricted in SWIFT have been placed in message anywhere; for example "&"

In fact consider auto-replacement of common failures with equivalent characters; so for example "&" replace with "+"

##### **4.2.4.1.3. Rule 3**

Any field in the 50 range used in the MT202 should have an 8 or 11 character BIC in the field.

###### **4.2.4.1.3.1. Exceptions to Rule 3**

For STP purposes a BIC is not always required in fields 56 or 57 provided a clearing code for the institution is quoted. If a clearing code is used i.e. a CHAPS sort code or Fed Wire / ABA reference, the code should be in the text field in GCCM.<sup>2</sup>

##### **4.2.4.1.4. Rule 4**

If the ultimate beneficiary is a financial institution with a BIC code the message type should always be a MT202. A BIC address should never be quoted in field 59 of a MT103, if it is the message should be a MT202

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<sup>2</sup> A list of the codes and number of digits used in clearing codes can be found in the SWIFT user guides.



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4.2.4.1.5. Rule 5

Field 72 should not be used unless absolutely necessary unless using the acceptable code words detailed in the SWIFT user directory, i.e. /TELEBEN/3.

Therefore, reject messages with field 72 information unless a code word is used.

4.2.4.1.6. Rule 6

In an MT103 if field 56 and 57 are used Rule 1 and its exceptions should be applied.

4.2.4.1.7. Rule 7

The absence of data in any mandatory field, 58 and 59 in a MT202 or 103 respectively<sup>4</sup>

4.2.4.1.8. Rule 8

Field 52 of a MT103 should always be a Lehman specific BIC.

4.2.4.1.9. Rule 9

All BICs should be valid published BICs in the current SWIFT directory as published on a quarterly basis.

4.2.4.1.10. Rule 10

For notifications of incoming funds, MT210s, the Internal Business and external nostro account to be credited and ordering customer / institution fields should be present.

#### 4.2.4.2. Applying these Rules

Given the number of rules Figure 2 is a simple decision tree on how to apply rules.

**Check 1 - Field sent to check is:**

- Not blank
- Is BIC code present
- If BIC code present, then test against valid BIC codes
- If BIC code is not present, then check for presence of valid clearing code test e.g. SC for sort code

**Check 2 - Field sent to check is:**

- Is non-blank
- Is not SWIFT Code

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<sup>3</sup> A list of code words and their usage can be found in the SWIFT user guides.

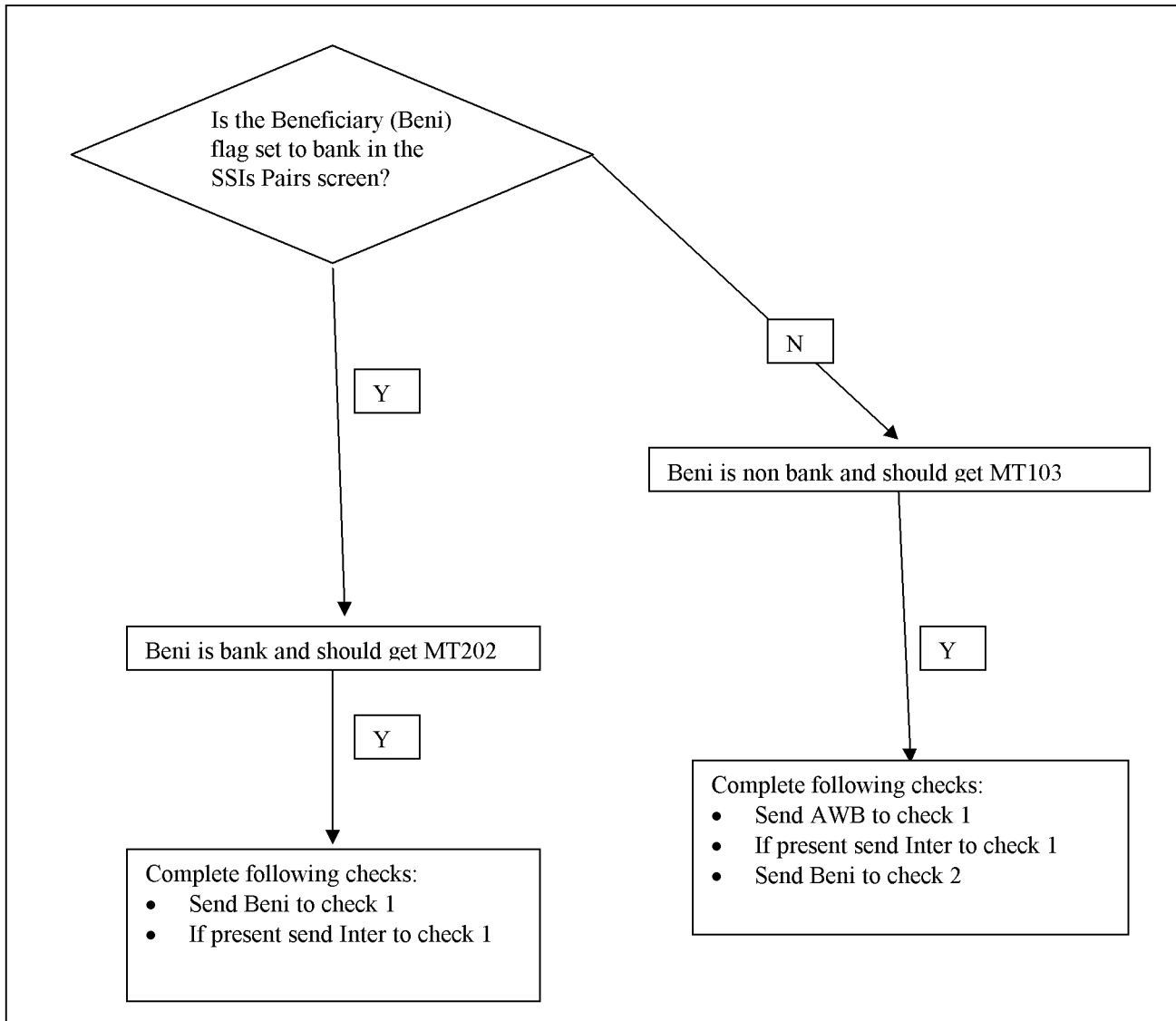
<sup>4</sup> This would be picked up by MERVA if input directly but if SSIs are not assigned then will GCCM make a payment?

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If a message is rejected due to a payment quality failure the original instructions should be retained with just the problem area(s) highlighted.

Figure 2



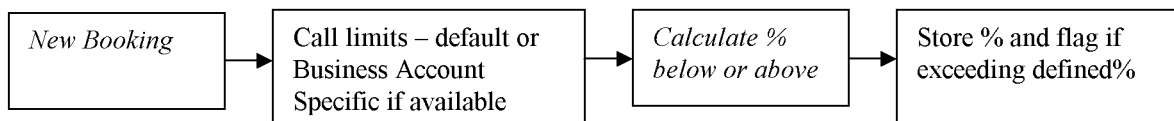
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#### 4.2.5. Process Name: Transactional Escalation Checking – Ref 1.2.1.4

To compare the current request against historical trends recorded for a Business and / or a specific Business Account and identify unusually large amounts.

Ensure all funding requests for each business are within that business's funding limits. Any request that exceed these limits should be escalated to different management hierarchies dependent on the percentage size of the limit exceeded.



Once passed through the data integrity checks payment request (outgoing real world debit requests) should be compared against the default limit for the Business Account quoted on the request. Internal movements and receipts should pass through check so percentage is recorded but should not fail validation.

Any payment requests that exceed the defined level will fail this control. At this point the payment and associated postings should be suspended until the appropriate authorisation from the CCM management team has been granted. The system should allow on-line authorisation by the CCM manager or by a CM user on behalf of a manager.

##### 4.2.5.1. Escalation Table:

As each Business Account is set-up its escalation level should default to a level of USD 50,000 equivalent. Users should then be able to update the level for the Business Account as part of the account set-up.

If Business Accounts are considered multi currency then it will not be practicable to set up each Business Account with an escalation level for all the currencies that it can be used for. So to compensate a default level of USD 50,000 equivalent should be used unless a Business Account has an escalation level for the currency of the request. It should be sufficient to calculate the currency equivalent of the default level simple using the prior working days FX rates.

For simplicity it should be possible to set escalation amounts at the business level and have these escalation limits flow down to all Business accounts owned by that business line.

In addition certain currencies may be blanket forced to an amount level of zero to act as a control for restricted or no longer active currencies. In these cases the limit cannot be overwritten for an individual Business Account and all activity must be approved.

Though the default level will exist, it is assumed that each Business / Business Account will require a level, some of which will be set manually while the majority will be defined through an overnight calculation process.

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Business Account escalation levels that have been set manually should not be automatically overwritten by the overnight calculation process. In addition there will need to be a user interface will be required to input and maintain the table of escalation criteria by Business Account / Currency.

#### **4.2.5.2. Overnight Calculation**

To set the escalation limits GCCM should undertake the following calculation on a daily basis:

- Retrieve 6 months of payment request (outgoing real world debit requests); minimum of one month's data required
- Calculate mean and standard deviation of the requests by Business and then by individual Business Account
- The limit will then be a formula driven calculation:
  - Initially it is likely to be mean and 2 standard deviations (95% confidence interval) for the overriding Business
  - Though it the longer run the formula should look to identify outlier events on a more detailed basis and potentially exclude these items from the calculation process.

GCCM should use the results of the calculation to overwrite the limits used the previous working day. It should also record and report where there has been a significant value change in the limits between the two working days as this may reflect a one-off transaction that does not reflect the activity through the Business Account and should be exclude from the calculation process. GCCM should then allow the appropriately authorised user to flag a historical movement so that it is excluded from the Escalation calculation process and rerun the calculation process for that particular Business Account.

#### **4.2.5.3. Authorisation**

Unlike other repairs which will be handled primarily by non-CM users it is expected that escalation approvals will only by handled with Cash Management. However handled the Verify process should record the verifying user's UserId, so that even if someone else subsequently amends the trade, it is possible to see who verified the escalation.

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#### 4.2.6. Process Name: Aggregate Business Limits – Ref 1.2.1.5

To monitor the total requirement used by a business line both gross and net during any selected period but mainly intra-day. Similar to the individual payment limit controlled by the Escalation check, the following process looks to track and identify businesses that are creating a large intraday (and possibly extended) liquidity drain.

During the day GCCM should track the total value of incoming and outgoing activity for a business line and then compare each new request from that business line versus the prior total. Once the net total exceeds the historical aggregate limit for a business, outgoing traffic should be held up either until incoming funds reduce the net number below the limit or CM approve an additional outgoing traffic.

At any one point in time GCCM should list the Business Lines that have traffic currently held up due to exceeding their predetermined limit in a queue accessible from main screens. If incoming funds or a preadvice notification arrives from the Business line while activity is pending, then the Business line should be automatically released and activity continue to be processed until the limit is again exceeded. Cash Management should also be able to enter the queue and authorise the release of traffic for the Business line either by allowing the CM user to update the current limit for the Business from the queue or by allowing the CM user to view the pending traffic and releasing the individual items from the queue. If the latter GCCM should confirm the effect releasing the items would have on the Business position.

For each Business aggregate levels should be automatically set by an overnight calculation process. In addition there will need to be a user interface will be required to input and maintain the table of aggregate escalation criteria by Business Account / Currency.

Note that for this section both the process and calculation suggested are a very simple way of achieving better control of the flow of activity for a particular business and it is likely that over time this checking process will need further revision and enhancements.

##### 4.2.6.1. Overnight Calculation

The following calculation is one option to set the aggregate escalation limits on GCCM.

*D&R should undertake the following calculation on a daily basis:*

- *Retrieve 6 months of requests (outgoing real world debit requests and incoming receipts); one month's minimum data required*
- *Calculate the average and standard deviation of the total net funding by Business Line from the individual Business Accounts owned by the Business*
- *The limit will then be a formula driven calculation:*
  - *Initially it is likely to be mean and 2 standard deviations (95% confidence interval) for the Business*

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GCCM should use the results of the calculation to overwrite the limits used the previous working day. It should also record and report where there has been a significant value change in the limits between the two working days as this may reflect a one-off transaction that does not reflect the activity through the Business Account and should be excluded from the calculation process. GCCM should then allow the appropriately authorised user to flag a historical movement so that it is excluded from the calculation process and rerun the calculation process for that particular Business.

#### **4.2.6.2. Authorisation**

Unlike other repairs which will be handled primarily by non-CM users it is expected that aggregate limit approvals will only be handled with Cash Management. However handled the Verify process should record the verifying user's UserId, so that even if someone else subsequently amends the trade, it is possible to see who verified the escalation.

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#### **4.2.7. Process Name: Compliance Checking – Ref 1.2.1.6**

To identify and report on items that are potentially out of policy payments that could in turn constitute a ‘duty of care’ failure somewhere with the Firm. There are two levels of checking one which will occur at the individual request level real time and one which will review all activity through the system and may not occur real-time.

These checks are not designed to be full-proof and do not look at the individual client accounts but at the Internal Business account level which will represent a business line not a client. Also the checks are likely to identify a number of false-positives, at least to begin with. Certain of these checks may be conducted elsewhere in the bank as well within GCCM D&R.

Messages sent into GCCM will be passed through the following checks to identify items for further study. Items that are identified may or may not be held back by the checks as certain checks may identify too many false positives initially for real time investigation. Therefore the system will need to be able to switch between just reporting items to also holding them back as the number of false positives is reduced.

GCCM should allow checks to be improved and further checks to be included after agreement between Compliance and CCM and suitable testing.

#### Notes

1. If an instruction is stopped CM will liaise with the appropriate CAD and / or Operations group for guidance.
2. If an instruction is not stopped CM should investigate the item next day.

Each night GCCM should create a report of all flagged items with the reason why for distribution to Compliance.

#### **4.2.7.1. Suggested Checks**

This list is not considered exhaustive – awaiting feedback from Kim Keating and Sherri Dewey specifically.

Update checks / maintaining rules is this user maintained, daily update from external list and user override.

##### 4.2.7.1.1. Checks on individual requests

1. Payment or Receipt SSIs include a restricted country
2. Currency is restricted
3. Payment or Receipt SSIs make reference to certain institution types including casinos or money exchange bureaus
4. Travel Rule details are not completed
5. On incoming money for the quoted client account the ordering instructions are not the same as those held on file in GARM

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6. SSIs quoted in message are not the same as the ones in GARM for the quoted GARM id. It is expected that this check in particular is likely to create a large number of false positives as the Firm allows third party payments under certain circumstances, such as Letter of Authorisation in place or Authorised Third Party Repetitive Payments, so GARM / GCCM may need to be able to flag that this approval is in place.
7. Final beneficiary detail line only quotes an account number not a name

#### 4.2.7.1.2. Checks on multiple requests

More complex checks reviewing activity data for patterns:

1. Large volumes of small payments to same beneficiary account from different internal business accounts
2. Unusual activity based on historical pattern for an internal business account (multiple payments and receipts same day on a low volume business account)
3. Time series and value mix analysis

#### 4.2.7.2. Authorisation

The following steps outline how items that have failed the Compliance validation process should be authorised.

As per any fail not managed by CCM, the requests should be sent out to the relevant group for authorisation. However in this case the items should be treated as requiring Manual repair (See alter for more detail on process).

Items that fail should be reported to Compliance via an automated email. The email should then allow the receiver to bring up the system and go straight to the detail of the message and thence authorise it.

In addition Compliance should be able to email their authorisation to Cash Management who in turn can authorise the request in D&R on Compliance's behalf.

#### 4.2.7.2.1. False Positives

To reduce the continually validation of repetitive items that are found to be false positives (a request that fails a check but in fact is not an issue) D&R should allow users to flag a request in such a way that any subsequent matching requests would automatically pass the Compliance checks.



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#### **4.2.8. Euro In Currencies**

It is expected that the countries that formally joined the EU in May 2004 will adopt the Euro after a period of currency stability. Therefore it is prudent from the start to build into GCCM D&R the ability to merge currencies into the Euro.

In fact where possible the functionality required to merge currencies into a new or existing currency should be made as flexible as possible to allow for the creation of new pan regional currencies.

Currencies should be added to a table that defines them as a merged currency, the rate at which they should be converted and the currency into which they should be merged. For example XEU was merged into EUR at a rate of 1 for 1. The conversion rate should be user definable or up-loadable from an existing feed of FX rates into GCCM D&R.

Requests that come into the GCCM D&R in a currency that has become an in-currency should be converted into the correct amount for the overriding currency (Euros) using the rate provided before the booking is assigned to a nostro. The original currency amount should be retained for future use including the creation of the outgoing payment request or preadvice notification.

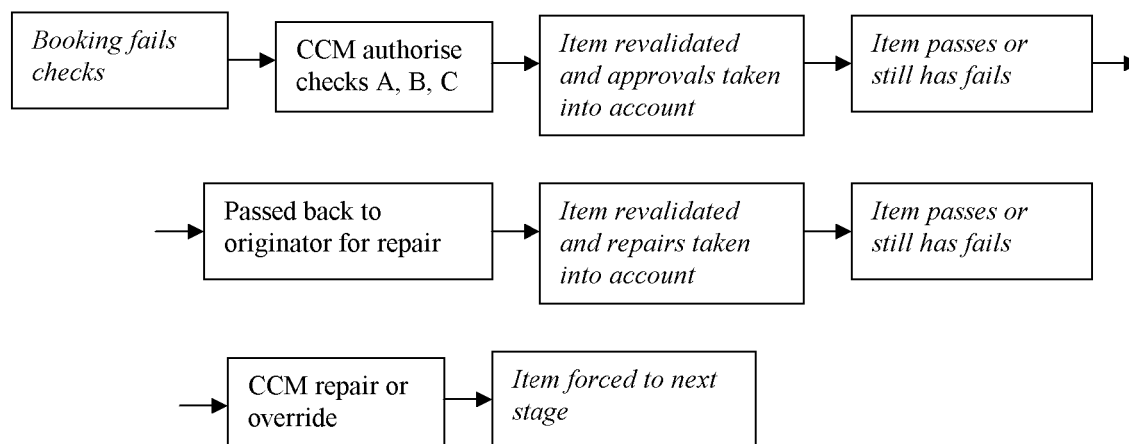
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#### 4.2.9. Process Name: STP Fails Repair Handling – Ref 1.2.2

To create a process where by items that fail one of the STP checks can be repaired within or outside of CCM. Note the authorisation of items that fail certain of STP checks will remain within CCM's control. These items have generally be noted in the individual documents

Items that fail an STP check will require approval or amendment. Approvals will be handled within Cash Management. Amendments should be handled by the originator of the request. If the originator cannot amend, CM will require an override ability to do so themselves and to either repair, force the request through or cancel.



This implies CM will require a screen where they can undertake both approvals and amendments. When an item is flagged as requiring multiple approvals by CM, CM should have the flexibility to approve one, some or all of the items open simultaneously.

Once a request has been approved (partially or complete) it should pass through checks again. If fully approved the item should pass these checks unless another one arises in the interim (say failed on escalation, but before approval time has moved on and funding deadline has passed, then the item should fail the Funding Deadline check). If only partially approved then items that have not been approved should again flag along with any new fail.

An external movement request that falls into repair should appear in the funding numbers as a pending number.

Amendments to static, etc. should be passed back to the originator of the request to effect the changes. To allow for the different capabilities of the source system, GCCM D&R will have two automatic processes for distributing the amendment request, which one of the processes is to be used should depend on the source system that generated the request rather than the internal Business Account that is involved in the movement. (The setting of the repair process will be part of the source system static set-up on D&R.)

To reflect the different processes by which messages are repaired, the failed items should be shown in different repair queues within the system. This will allow CCM to quickly identify items requiring their

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approval and ensure items are being repaired in a timely manner by the users directly or through the source systems. A suggest set-up would be

- Items requiring CCM approval
  - Sub-divided by currency and error
- Items requiring Compliance approval
  - Sub-divided by currency
- Items requiring manual repair
  - Sub-divided by currency and error
- Items sent for repair
  - Sub-divided by currency and source system

Note that it may be possible for an item to appear in three queues simultaneously; as item requiring CCM and Compliance approval could also require repair but at this point it is not expected that items will be sent both for manual repair and back to the originating system.

However as implied above a user should still be able to access a message sent back to the originating system and update the request within D&R so that it passes the STP engine.

#### **4.2.9.1. Option 1 Web Access to Amendments**

Items for repair are automatically emailed to the user group responsible for the Business Account quoted on the request. The email would contain a link back to the Business account. The link would open to either:

- The standard view for the business account (to be detailed later but essentially designed to look like a summary statement with drill down to the detail) in which users could recall a request by number, by drilling down on the appropriate item or recalling items awaiting amendment or approval of an amendment.
- Or a special screen showing all items awaiting amendment or approval of an amendment in order.

The users would then be able to edit the relevant 'breaking' details only and save the amendment for approval or Cancel the request.

The number of approvals required for an amendment will be as defined in the Business Account static.

#### **4.2.9.2. Option 2 Feed back to source systems**

Items for repair are sent back to the GCCM Gateway that then returns them to the appropriate originating source system. The source system reads the return, updates its own records and flags the return to its users. Once the users complete the necessary amendment and it is approved as per the source systems own internal logic. The amended instruction is returned to the GCCM Gateway for reprocessing.

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The Gateway will then pass to the updated request the Payment Import module. This will need to recognise that the item is not a duplicate but an amendment to an earlier transaction. Once it does so it should update the appropriate record in GCCM, increasing the version number and status as a result.

Regardless of the method used to repair an item, the request should again be passed back through the STP engine to ensure the repair addresses the highlighted issue(s).

If an item fails for a second time, then it should go to the Cash Mgmt exception queue for them to review.

Items that remain awaiting approval or amendment beyond their value date should be cancelled. Back-valued items awaiting repair should be cancelled at the end of the processing day on the day they were submitted or end of the value date they have been funded for, which ever is later.

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#### **4.3. D&R: Detail of External Message Generation Validation (STP Engine) – Ref 1.3**

##### **4.3.1. Process Name: Identify Real World Nostro – Ref 1.3.1.1**

To identify real world account that should be used to settle requested transaction. A request that has come into GCCM that is identified as an external item and so needs to be paid from and / or received into a real world Lehman nostro.

The intention here is determine which nostro account is most appropriate under any given combination of internal Business Account, legal entity, regulations and Treasury funding availability. Once the nostro account is identified the funding request should move from Pending Assignment of External Account to Pending Settlement in the appropriate nostro account.

The choice of nostro account through which to pay an item is complicated by the variety of regulations and individual business requirements that the Firm currently supports. The process described below is an attempt to work around the current set-up to minimise the initial disruption to the current operating environment while allowing traffic to be consolidated and a simpler process emerge over time.

The basic premise is that if a request sent to GCCM quotes a Business Account number that is directly linked to external account as the account to be debited / credited by a request then the nostro account should be used as the default by the business and GCCM acts as a wash through. If an external account does not exist then the request is processed through the entity nominated as the Funding entity for the legal entity in which the Business Account resides in and intercompany journals are created to show movement on behalf of the originating entity.

It is also possible that traffic for a business may have to settle for whatever reason through a nostro account in a particular entity (as a result of historical set-up) and for this reason there exists the concept of Paying Agent that could be different from the Funding Agent. This scenario will be used if:

- LBI retains a USD nostro account to settle its own activity, funded by LBHI, yet pass certain currencies through a general nostro account.
- To manage the migration of LBSFI non-USD activity which settles through LBI's nostro accounts yet is funded by LBHI UK Branch's nostro accounts.
- The Treasury entities themselves where they act as Paying Agent for each other. For example the USD funding relationship is one of roll-up from LBAH to LBHI UK Branch to LBHI.

Finally to overcome issues such as Euro-In Currency process or cross-currency funding, GCCM will need to be able to convert traffic between currencies and pay them through the appropriate real-world account. In these cases the external nostro should be chosen based on the currency of the final payment: this will be quoted for individual items but may be automatically derived for more generic items such as Euro-In currencies and so noted on the request by GCCM.

Once the nostro account is identified the funding request should move from Pending Assignment of External Account to Pending Settlement in the appropriate nostro account.

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The process described below is assumed to work automatically but it should remain possible for a Cash Mgmt user to override the defined external account used for settlement should the occasion arise (for example money market deals from TWS including Balance Swaps). Other overrides will also need to be accommodated. These include:

- The intraday release function which may override the external nostro to be used to continue the routing of payment activity should the default nostro account 'max' out.
- The choice of Payment Channel
- Invocation of a back-up nostro account.

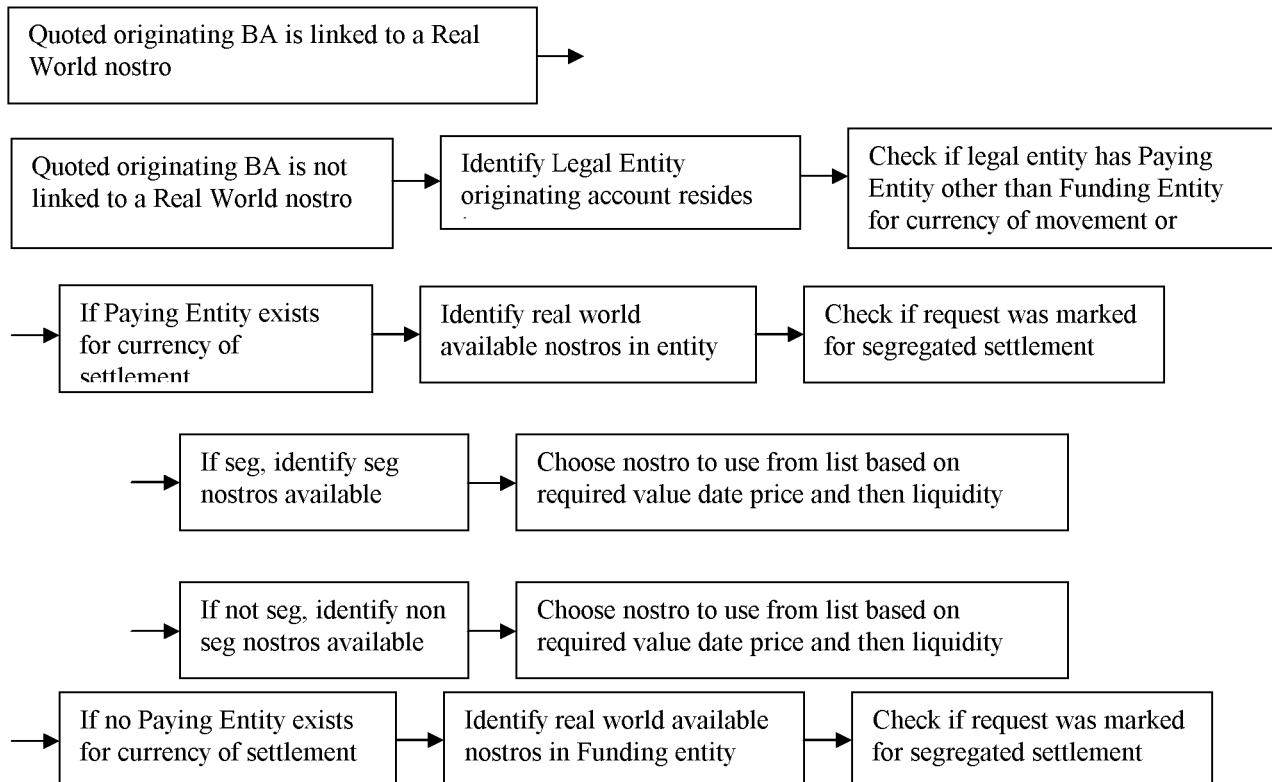
#### Notes

1) If the choice of Payment Channel or invocation of back-up nostro account occurs then nostro positions and accounting should reflect this (though in both cases the accounting to the Business Account should pass through the designated Funding Entity for that Business account and any additional intercompany journal / position should be created between the Funding Entity and the owner of the external account used.)

2) An amendment of external nostro should occur before accounting is generated as the generation of accounting is assumed to occur after settlement.

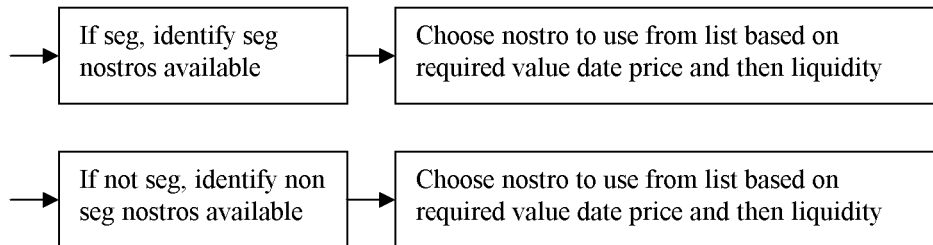
#### 4.3.1.1. How process could work:

The following steps indicate how the nostro account would be chosen. This is explained in more detail below.



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4.3.1.1.1. If the external account exists:

If the Business or Originating Account quoted on the instruction is defined as linked to a Real World / External nostro in the account static, then GCCM should route the external message (e.g. Swift) through this Real World account. GCCM will still produce accounting through this may wash through the entity (i.e. net to zero).

This simplification may cause an issue in Europe and Asia where Ops use the same ITS nostro for free cash and DVP activity and accounts classed as Real World Depots or Margin accounts should not be used for free cash activity only funding movements. In particular these external accounts usually suffer from higher payment and interest fees for non-DVP settlement.

To get around this issue Ops can either:

- Be provided with two internal Business accounts (one for the free activity that is purely internal and one that represents the external) that they reconcile the trade bookings against and should quote the appropriate details on the request.
- Or GCCM is allowed to override the external account by using the Funding / Paying Entity for all activity not flagged as FUND where the external nostro account type is not a Nostro.

4.3.1.1.2. If the Business Account only has a Funding Entity for the currency of the movement:

If the Business or Originating Account quoted on the instruction is defined as an Internal Business account in the account static (and the Business account is not linked to an external nostro), then GCCM should route the external message (e.g. Swift) through to the appropriate the Funding Entity.

In the Funding Entity the nominated external account should be used.

It is possible that the Funding Entity may also not have a real world account in the specified currency in which case GCCM should pass the instruction on to the Funding/ Paying entity flagged in its records for settlement.

Accounting should involve journals to the Business account, Real World Nostro and intercompany accounts.

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4.3.1.1.3. If the Business Account only has a Funding Entity for the currency of the movement but the Business Account is marked as a segregated cash account:

If the Business or Originating Account quoted on the instruction is defined as an Internal Business account in the account static, then GCCM should route the external message (e.g. Swift) through to the appropriate Funding Entity marking the request as a segregated one.

In the Funding Entity the nominated external account for segregated activity should be used. If no segregated account exists the nominated default external account should be used.

It is possible that the Funding Entity may also not have a real world account in the specified currency in which case GCCM should pass the instruction on to the Funding/ Paying entity flagged in its records for settlement.

Accounting should involve journals to the Business account, Real World Nostro and intercompany accounts.

4.3.1.1.4. If the Business Account has a Paying Entity for the currency of the movement:

If the Business or Originating Account quoted on the instruction is defined as an internal Business account in the account static and a Paying Entity is nominated, then GCCM should route the external message (e.g. Swift) through to the appropriate Paying Entity.

In the Paying Entity the nominated external account should be used.

It is possible that the Paying Entity may also not have a real world account in the specified currency in which case GCCM should pass the instruction on to the Funding / Paying entity flagged in its records for settlement.

Accounting should involve journals to the Business account, Real World Nostro and intercompany accounts; though for the Business Account the accounting should first pass through the designated Funding Entity for that account and an additional intercompany journal / position should be created between the Funding Entity and the Paying Entity.

This two step accounting process may seem overkill but is designed to address the process for funding and settlement of the traffic until the process itself is simplified and as a result allows the regulated entities to minimise the number of intercompany positions created by the use of a Paying Entity.

4.3.1.1.5. If the Business Account has a Paying Entity for the currency of the movement but the Business Account is marked as a segregated cash account:

If the Business or Originating Account quoted on the instruction is defined as an internal Business account in the account static and a Paying Entity is nominated, then GCCM should route the external message (e.g. Swift) through to the appropriate Paying Entity.



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In the Paying Entity the nominated external account for segregated activity should be used. If no segregated account exists the nominated default external account should be used.

It is possible that the Paying Entity may also not have a real world account in the specified currency in which case GCCM should pass the instruction on to the Funding / Paying entity flagged in its records for settlement.

Accounting should involve journals to the Business account, Real World Nostro and intercompany accounts; though for the Business Account the accounting should first pass through the designated Funding Entity for that account and an additional intercompany journal / position should be created between the Funding Entity and the Paying Entity.

4.3.1.1.6. If the Business Account is set-up not for the currency of settlement

If the Business or Originating Account quoted on the instruction is defined as being set-up for a different currency from the currency on then the individual request then the external account should be identified by looking for the appropriate currency account for the Funding Entity linked to the Business Account.

In this case additional cross-currency accounting will need to take place.

4.3.1.1.7. Example of Paying Entity

*Post GCCM implementation LBI USD traffic is required to pass through LBI's USD account. For an instruction sent from MTS to GCCM, MTS quotes the internal Business Account to debit. GCCM goes to generate payment for settlement and identifies legal entity from internal Business Account static.*

*This legal entity static identifies LBHI as Funding Entity and LBI as Paying Entity. Latter overrides former, so GCCM then checks tables 5.1.3.1.2 Paying Entity table and 5.1.3.1.3 External Nostro numbers to identify the account to be used for the cash movement – CCY is included for speedier checking, if the currency of the payment doesn't exist in list request flips back to Treasury Funding Entity. Accounting credit is passed to appropriate account.*

*Now the above movement needs to be funded so the external nostro account needs to receive funds from LBHI and intercompany record created. Above process would necessarily create the correct result. So how is this driven? From the account drawing down via a funding 'special' process (FUND) against the main account of the Funding Entity.*

4.3.1.1.8. Multiple External Nostros in the Funding or Paying Entity

has more than one external nostro account in currency of the request.

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#### **4.3.2. Process Name: Determine Payment Channel – Ref 1.3.1.2**

This section outlines how to identify the optimally settlement method for a particular external cash transfer and generate appropriate message, such as Swift. The intention is to determine what payment channel should be used by GCCM externally to efficiently and cost effectively settle the request.

The choice of how to pay an item is complicated by the variety of options that the Firm currently supports and in theory has available to it. The process described below is an attempt to work around the current set-up to minimise the initial disruption to the current operating environment while allowing traffic to be consolidated and a more cost effective process emerge over time.

The basic premise is that the default payment channel for an existing external account has already been defined and this should be utilised until additional channels are added, at which point a default will nominated, though GCCM should use the least cost method available for a given value date, urgency and amount combination.

The process described below is assumed to work automatically but it should remain possible for a Cash Mgmt user to override the defined channel used for settlement should the occasion arise. Other overrides will also need to be accommodated. These include:

- The intraday release function which may override the channel to be used to continue the routing of payment activity should the default 'max' out.
- Invocation of a back-up account.

It is though expected that the majority of accounts will have only one option.

If after the choice of payment channel has been identified change of external account occurs, the funding balance for both accounts should be updated appropriately (out of one and into the other). This should not effect the overall funding for the Firm though it may affect a specific entities funding.

Note

1) If the choice of Payment Channel or invocation of back-up account occurs then nostro positions and accounting should reflect this (though in both cases the accounting to the Business Account should pass through the designated Funding Entity for that account and any additional intercompany journal / position should be created between the Funding Entity and the owner of the external account used.)

2) An amendment of a channel should occur before accounting is generated as the generation of accounting is assumed to occur after settlement.

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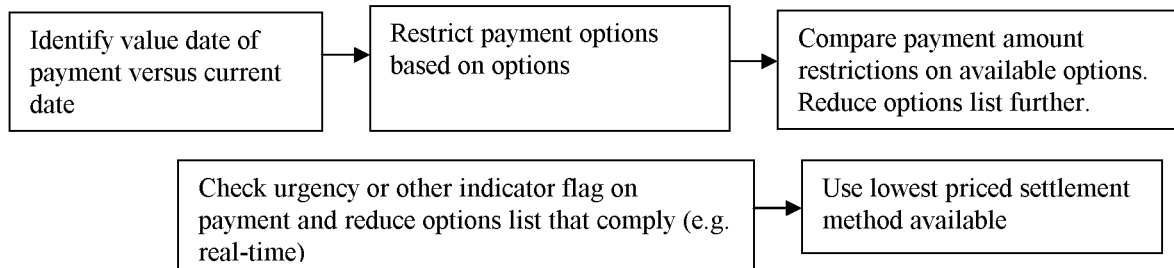
#### 4.3.2.1. How process could work:

The following steps indicate how the channel would be chosen. This is explained in more detail below.

##### Payments Only

Only one option exists

##### Otherwise



##### Receipts

Notify Agent bank by lowest priced method for receipts

#### 4.3.2.1.1. Example of Payment Channel Rule Set for USDs

This is represented by the following matrix of choices for USD traffic:

Payment Channel	Restrictions	Value Date difference	Amount	Urgent Request	Price
ACH		X	Less than Y	No	A
Agent bank via SWIFT		0	Unlimited	Normal / Urgent (within 1 hour)	B1
Agent bank via CPU		0	Unlimited	Normal / Urgent / Immediate (within 30 minutes)	B2
LB Bank FED WIRE		0	Less than Z	No	C

Where:

- Value Date difference is number of days between required value date and current date
- Urgent request is worst case time to process once released from GCCM; for example message authorised for release after agent payment cut-off should probably go via CPU to ensure released externally from Agent
- B1 and B2 will probably be similar Agent costs but fully loaded costs including infrastructure / messaging costs may create difference
- C would be lower than B's but potentially more than A

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4.3.2.1.2. If there is only one external channel:

If for the chosen external Nostro only one option exists, then GCCM should route the external message through this option (e.g. Swift).

4.3.2.1.3. If more than one option exists:

If for the chosen external Nostro more than one option exists, then GCCM should route the external message through the option that is most cost effective for the Firm given the information available on the instruction. (Note the Intraday Release function will be allowed to override the choice of payment channel should it / a Cash Mgmt User believe that rerouting a request improves the Firm's intraday liquidity.)

GCCM should go through the following checks, though the default for a nostro should always be used if there is any doubt:

- For the value date requested what options are available?
- For the amount what options remain available?
- For the urgency flags set on the message what options remain available?
- For the remaining options use the one with the lowest Price band.

Note a further check might be applicable for receipts as some channels do not accept Preadvice notifications.

Once the channel has been determined the message should be constructed to pass straight through the channel (see section on Message Generation and Outgoing Traffic Formatting in term) and passed to the Intraday Release function.

Items that are destined for batch release should be written to the appropriate file. The sending / release of any batch file will be contained within the Intraday Release function.

It may be possible for the Firm to leverage its bank licenses by having both Lehman Brothers Bank and Bankhaus act as cash settlement agents for activity generated elsewhere in the bank. In these cases the channel will be flagged as Internal Option.

Items so flagged should then be moved to the external nostro for the entity flagged as owning the selected Internal Option. Once in that account the external messages should be generated as appropriate for that account.

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#### **4.3.3. Process Name: Message Generator – Ref 1.3.1.2**

This section outlines the message that can be generated, e.g. a Swift message, to request the settlement of action an external movement. The message will be formatted in accordance with the formatting laid out in the next section, Outgoing Traffic Formats.

This definition outlines the five basic messages to be created by GCCM:

1. Bank to Bank Payment
2. Customer Payment
3. Receipt
4. Cancellation
5. Amendment

Combinations of the messages maybe created, for example:

- Cover method payments would require Bank to Bank and Customer Payment messages
- Nostro funding would require Bank to Bank and Receipt messages.
- Back-valued payment would require a payment with current value and an amendment message

Once generated, the messages should go to the Intra-day release function for release with their status on the reporting screens updated.

External messages should be generated a set number of days in prior to value and not before; for example for a payment received on 1<sup>st</sup> value 14<sup>th</sup> for USD the external message does not need to be created on first but say on 13<sup>th</sup>. The period forward of value that messages should be generated should be set as part of the currency / external nostro account static

#### **4.3.3.1. Payments**

GCCM should create a payment message whenever the amount booked or advised by Operations is a debit in cash flow terms. The exact message created will be determined by the chosen Payment Channel.

Note payments cannot be sent through most channels back valued, therefore GCCM will need:

- to automatically generate the payment message with the date the item has been funded for
- and an amendment request to have the item processed with good value and the beneficiary made whole for the value date difference.

##### **4.3.3.1.1. For SWIFT**

The payment will either be to another financial institution or a non-financial institution customer.

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- Payments to a financial institution should be by MT202. Financial Institutions will generally either have a BIC code or a Fed Wire number, though exceptions exist.
- Payments to a non-financial institution should be by MT103.

The request flag should be set when the message is sent to GCCM but the simple split above can be used to determine the appropriate message type.

In addition a third option should be available to the source systems and for CM use if editing a payment request and this is a Cover payment. Cover payments involve a combination of MT202 and MT103 being sent.

- The MT202 is sent to the Account With Bank on the details supplied quoting this bank as the beneficiary on the 202.
- The MT103 is sent direct to the Account With Bank indicating they should have received funds from Lehman's correspondent bank and that they should be applied to the original beneficiary.

#### 4.3.3.1.2. For Batch / Clearing House items

Payments that will be settled as part of batch file sent to a bank for processing should be written to the file.

Batch systems do not generally differentiate between payments to a financial or non-financial institution but do require account numbers to be quoted in the beneficiary's details rather than a BIC code.

#### 4.3.3.2. Receipt

Certain currency markets / agents do not count Preadvices of incoming funds as confirmation that funds will be credited to a nostro account (and the Agent does not count towards either the account intraday balance or towards their own funding).

However GCCM should create the messages for all currencies in the appropriate format for the payment channel chosen for the notification as certain institutions, in particular Euroclear, make use of them even if the market standard for a currency is not to count them (e.g. GBP & USD into Euroclear).

The release of these messages will be controlled within the Intraday Release function.

#### 4.3.3.2.1. For Swift

MT210s should be created using all available information.

Note at the nostro account level D&R should allow users to restrict the sending of MT210s externally (though D&R should accept MT210s for all Internal Business accounts) if they will not be used by Agent.

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#### **4.3.3.3. Cancel**

When an item has been cancelled but has been released to the Agent bank for processing, a cancellation message will need to be sent.

GCCM should generate the appropriate message where it can (initially may only have Swift cancellations MTn92 messages) and place it in a queue for release by CM. The sending of the cancellation message should be noted on the D&R record of the request (this info should be passed to GSSR).

#### **4.3.3.4. Amend**

When an item has been amended but has been released to the Agent bank for processing or back value requested, an amendment message will need to be generated automatically.

GCCM should generate the appropriate message where it can (initially may only have Swift amendments MTn9? messages) and place it in a queue for release by CM. The sending of the amendment message should be noted on the trade (this info should be passed to GSSR).

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#### **4.3.4. Process Name: Outgoing traffic formatting – Ref 1.3.1.4**

Each payment channel available to GCCM will have its own specific formatting requirements and this section outlines some basic rules. Further work will be required to analyse each channel as it is set-up, in particular any local specific requirements such as Swift Zengi, kanji or other non-roman alphabet characters in local interfaces will need to be catered for.

Note in addition many Agent banks impose their own specific STP requirements on top of the basic ones and in time GCCM will need to be able to cater for these specifics.

Original currency amounts should be quoted on the message if the request had been for example in a Euro-in currency. Items directly in Euros do not need to append Euro currency original amounts.

The following rules are based on Swift's suggested formatting of its messages for STP purposes. Similar rule sets will need to be created for ACH and other payment channels. Note these rules sets should not be mandatory for every payment channel (as it would not always make sense).

#### **4.3.4.1. Payment Channel - Swift**

##### **4.3.4.1.1. Rule 1**

Any field in the 50 range used in the MT202 should have an 8 or 11 character BIC in the field.

##### **4.3.4.1.1.1. Exceptions to Rule 1**

For STP purposes a BIC is not always required in fields 56 or 57 provided a clearing code for the institution is quoted. If a clearing code is used i.e. a CHAPS sort code or Fed Wire reference, the code should be in the text field in GCCM suffix will be D and the format of the message will be styled as follows dependent on the clearing system used:

57D: //SC309287  
Lloyds Bank  
Fenchurch Street Branch

Each clearing code is shown with a two-letter prefix followed by a set number of digits.<sup>5</sup>

##### **4.3.4.1.2. Rule 2**

If the ultimate beneficiary is a financial institution with a BIC code the message type should always be a MT202. A BIC address should never be quoted in field 59 of a MT103, if it is the message should be a MT202

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<sup>5</sup> A list of the codes and number of digits used in clearing codes can be found in the SWIFT user guides.



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4.3.4.1.3. Rule 3

Free format text information for the beneficiary should generally be detailed in field 70 of an MT103 and field 72 of a MT202. Occasionally both fields are used on an MT103.

4.3.4.1.3.1. Rule 3 Sub-rule 1

Limited predefined code words are allowed in field 72, if these are not quoted a generic choice, such as BEN should be added.

4.3.4.1.3.2. Rule 3 Sub-rule 2

There is no restriction in field 70 however it is better to add no extraneous data to any message.

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#### 4.3.5. Process Name: Intraday Release – Ref 1.3.1.5

This process will control the release of traffic through a particular nostro account or even currency to maximise the 'flow' through the Firm at the lowest cost by making use of free intraday credit lines in preference to charged or secured intraday credit lines. The process will be semi-automated with certain items potential going straight out, others held and released in individual or in batch, or released in an automatic phased approach. Once released the items should be passed to the Gateway for processing via the appropriate channel.

All items should be sent to a pending release queue by currency. Items for batch file processing should be written to separate queues to those that are to be processed individually. Every queue should be monitored via a screen (s) showing queues and number of pending items per queue. The screen should have a drill down facility through to show the pending items in a particular queue.

The system should allow messages to be released up to a debit cap / intraday limit for the nostro account. Note debit cap / intraday limit will be treated as synonymous for the development of GCCM D&R, though the debit cap implies a harder limit than intraday limit. The debit cap / intraday limit should be set per nostro account as part of its static set-up.

The intraday balance should be tracked through the day and compared with the debit cap. The release of any messages that would take the balance beyond the debit cap should be halted until funds have been received into the nostro account reducing the debit balance. Cash Management will retain the ability to override the debit cap restriction and manually release items. GCCM D&R should be able to report any exceeding of the debit cap so that any costs implications of the excessive overdraft position can be properly allocated back to a business line.

For items that have been released and create a requirement above the debit cap, CCM users should have the ability to impose a penalty charge on the request to offset any cost implications. This charge should use the same methodology as the charging imposed for funding a movement after the funding cut-off for the currency of the request.

Until the system has an external feed giving real time balance information<sup>6</sup> (or for nostro accounts where this is not available), the intraday balance should in general be calculated as:

- Real World Start of Day balance
- Less any released payments that have been confirmed
- Plus any confirmed receipts
- Less any released payments that have not been confirmed

Though the system will need to allow for differences Agent bank methodologies. Unconfirmed receipts should not be included for intraday balance reporting.

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<sup>6</sup> CCM have investigated various options for real time balance information but have not yet made a decision on which approach is the most cost effective for the requirements.

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Within the set-up for each queue it should be possible to flag which intraday process should be followed. The options that have been defined are completely manual, semi-automatic release or completely automatic release. Each option is outlined in more detail below.

#### **4.3.5.1. Manual Release**

Once in a manual release queue a user should be able to highlight a single or multiple items and either:

- Authorise them for release
- Request items are netted – see section on netting for further details
- Request an item is split – see section on netting for further details
- Request items are Unnetted (net reversed) – see section on netting for further details
- Cancel the outgoing message in case of errors
  - Should the cancellation of an outgoing message require separate authorisation?
- Delete the outgoing message
  - Not through message should be deleted the accounting should still occur.
- Amend the real-world account to send the message out of (this should cause the message to be regenerated)
- Reroute the payment changing the Payment Channel (this should cause the message to be regenerated)

At the point a request is authorised for release the payment should be compared to the intraday limit / debit cap number and the current nostro account balance. Where sending the payment would cause the limit to be breached the system should indicate this to the user and give them the option to not release the payment at that point. Messages that are not released should be put back into a pending release status.

Note for the current nostro account balance the system should make use of any real-time feed of account balance data first and if this is not available then its current projected intraday balance based on confirmed and released activity.

Note only likely to be payments that are moved between real world nostro or payment channels but should allow Preadvices to be affected as well in case clients have paid incorrect instructions.

#### **4.3.5.2. Semi-Auto release process**

Items should be listed in priority order using similar set of ordering criteria as above:

1. Urgent flagged items
2. Incoming notifications
3. Outgoing payments under preset amount (definable by queue)
4. Remaining outgoing payments

And should be grouped within a priority by the internal Business Account and Beneficiary of the payment.

A CM user should be able to highlight a single or multiple items and either:

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- Authorise them for release
- Request items are netted – see section on netting for further details
- Request an item is split – see section on netting for further details
- Request items are Unnetted (net reversed) – see section on netting for further details
- Cancel the outgoing message in case of errors
  - Should the cancellation of an outgoing message require separate authorisation?
- Delete the outgoing message
  - Not through message should be deleted the accounting should still occur.
- Amend the real-world nostro account to send the payment out of (this should cause the message to be regenerated)
- Reroute the payment changing the Payment Channel (this should cause the message to be regenerated)

Note only likely to be payments that are moved between real world nostro or payment channels but should allow Preadvices to be affected as well in case clients have paid incorrect instructions.

At a certain point in the day (for example within an hour of payment cut-off for the real world nostro) or when the queue length reaches a certain size the system should then be allowed to process the release of certain traffic automatically.

Items should only be auto-released if they meet strict criteria and should be action in line with priority ordering / listing of the requests. The following are some suggestions:

- Amount out under USD1mm equivalent
- Amount in under USD10mm equivalent
- Beneficiary account is not a Lehman nostro or Internal Business account

Items should continue being processed either after auto release or manual release until the balance reaches the debit cap. At this point payment should be held back (Preadvices can continue to go out) until the balance on the nostro account reduces (this will happen as incoming funds are credited to the nostro account at the bank).

As individual queue lengths build up it is likely that CM Users will need to go in and release items through to the bank that would cause the debit cap to be exceeded. This should be allowed. In addition if there are pending payments still in the queue within an hour of the payment cut-off, it should be possible for the system to override the debt cap control and continue sending items itself to prevent fails.

#### **4.3.5.3. Auto release process**

All items in an auto-release queue should be prioritised in the following order

1. Urgent flagged items
2. Incoming notifications / Preadvices
3. Outgoing payments under preset amount (definable by queue)
4. Remaining outgoing payments

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Within each of these prioritises, items should be released externally using the First In First Out (FIFO) principles.

Items should continue being processed until the balance reaches the debit cap. At this point payment should be help back (Preadvices can continue to go out) until the balance on the nostro account reduces (this will happen as incoming funds are credited to the nostro account at the bank).

As individual queue lengths build up it is likely that CM Users will need to go in and release items through to the bank that would cause the debit cap to be exceeded. This should be allowed. In addition if there are pending payments still in the queue within an hour of the payment cut-off, it should be possible for the system to override the debt cap control and continue sending items itself to prevent fails.

#### **4.3.5.4. Batch Files**

The files that have been created for batch processing payment channels should appear in their own queues by currency and agent bank. The summary screen should show number of files and number of items within the files.

A user should be able to drill down into a queue and be shown the individual files including information of channel and number of items in the file, value date of items in the file.

User should be able to release a file by selecting from the list and authorising it to go.

#### **4.3.5.5. Notes on Release methods**

1) There should also be a simple way to hold all traffic for certain nostro accounts / currencies overriding the default for the effected nostro accounts to allow particular payments to be prioritised or awaiting incoming funds before activity is released. It should also be easy to change back so that once the particular items have been paid or received normal processing can resume.

2) As well as the basic release queue per nostro account, the system should allow sub-queues for priority, value and / or legal entity making the payments. Therefore it should be easy to set and configure existing and new queues.

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#### **4.3.6. Message Acknowledgement**

It is expected that for each individual message or batch file sent from D&R will be acknowledged by the Payment Channel it is sent to, for example MINT should confirm back that it has received messages from D&R and been able to 'take in'.

Where the connection to the Payment Channel is not direct (e.g. via MINT for SWIFT) it is likely that the bridging system will also send back statuses indicating that it is successfully processing the item and has released the request or file through to the chosen Payment Channel connection. It turn the Payment Channel will confirm its acceptance or rejection of the message or file.

Any such acknowledgements should be received into D&R updating the statuses of the items in the release queues. It should be possible to filter the queues to identify items yet to be released, released not acknowledged, etc., so for example SWIFT will ACK messages that it can successfully process.

Note for batch file based Payment Channels, the channel may confirm back acceptance or otherwise of the overall file and then of the individual requests in the file. D&R should be able to take in and report both levels of acceptance.

These final status messages for each individual message should be passed back to originating systems to show that each message has been successfully sent from D&R.

##### **4.3.6.1. Failed messages**

As is noted above while messages can be accepted by the Payment Channel they may also be rejected or fail during processing. Depending on the point of failure, GCCM D&R should be able to allow users to amend the message and resubmit. At other points of failure it may be easier to repair in the bridging system, though this will reduces the envisaged benefit that D&R will contain a copy of the final message sent out for each request submitted to it.

For messages that are not accepted by the bridging system or Payment Channel, D&R should allow CCM users to access the message, amend the incorrect details and submit the request for approval at which case the external message should be regenerated – with a new unique id – and sent to the appropriate release queue again.

For messages that are accepted by the bridging system (or Payment Channel) but fail a check within the system (or Payment Channel), depending on the system and its processing capabilities, CCM users may have to access the bridging system and repair the message in the system.

However if the system allows for amend messages to be submitted to after reporting a fail, D&R should allow CCM users to access the message, amend the incorrect details and submit the request for approval at which case the external message should be regenerated – with the original unique id – and sent to the appropriate release queue again.

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#### 4.3.7. Process Name: Netting – Ref 1.3.1.6

As mentioned in the Intra-Day Release process, allow flows to be netted or bulked together to minimise the number of individual cash flows, identify opportunities where netting could have taken place though items were paid gross and allow flows to be split down into multiple flows to allow large amounts to be paid without creating intraday liquidity positions.

By netting, one single payment could be made from multiple numbers of payment and/or receipt transactions, thereby reducing costs.

External transactions could be netted only if they meet the following criteria:

- Same currency
- Same agent bank
- Same external bank account number
- Same counterparty/customer<sup>7</sup>
- Same payment channel
- Same value date
- Same legal entity

Internal transactions could be netted for the same counterparty/customer across legal entities. GCCM needs to validate and when the legal entities are different, provide facility for user to select a SSI to use as additional criteria. User would then confirm by hitting 'APPLY' or 'CONFIRM'.

If an during the process of netting instructions, the users selects part an internal transfer where GCCM D&R is responsible for generating the payment and receipt messages and these requests have been linked in advance (for example the cash funding of an external account from a main account), GCCM D&R should inform the user of the linked request.

The user should then be able to request the system to net up any associated linked items automatically to ensure the expected activity through the first nostro account matches that through the other nostro account. So for example a series of pays from one nostro account, linked to a series of receipts elsewhere, could be netted and the receipts would be netted automatically.

The amount of the netted transaction will be the sum of the amounts of the individual messages, allowing for the direction of the individual flows (i.e. payments are negative and preadvices are positive). If there were two payments, the combined would still be a payment of a larger amount. If there were a payment and a receipt, the resultant is either a payment or a receipt.

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<sup>7</sup> Currently CM matches across customer but only for internal flows, i.e. LBCC, LBHI and LBI. Hence need to be able to select SSIs to be used if multiple customers selected

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#### 4.3.7.1. Manual Process

It is expected that users will select the trades from the Intraday Release queues, highlighting the items to be included and the selecting the netting option. The highlighted flows would then become available in the netting screen.

Alternatively user will enter the netting screen and be able to search for a particular counterparty/customer number, nostro account number or counterparty/customer name. It should be possible to narrow this search further by currency. GCCM will return a list of transactions for the specific counterparty / nostro account.

Payments							
Ref Id	Message Type	Bank	Bank Account	debit/credit	Amount	Currency	Value Date
001A	MT202	Chase		12334 debit	-100000	USD	July 21, 2004
Receipts							
Ref Id	Message Type	Bank	Bank Account	debit/credit	Amount	Currency	Value Date
033B	MT210	Chase		12334 credit	74000	USD	July 21, 2004

User will highlight or check those items to be netted. GCCM will validate on specific fields, see Rules below. Once these validations are passed, then GCCM will assign a Net id to the individual items as well as to the newly created netted message.

The status of the individual items should be changed to "NETTED".

The resultant new message will be sent back to the queue for release with the appropriate priority. Note that to ensure the process is properly controlled, especially as the system may allow cross netting, the process of netting and splitting should require two separate users (or four eyes). Specifically CM User 1 would net / split messages and then a second distinct CM User would have to release the resultant message(s). In fact net / split items should be ineligible for auto release to ensure second touch always happens.

If a source system sends a request to amend or cancel a request that has been bulked, the bulked messages should fall into repair if it has not been released. If it has been released then the amend / cancel should be flagged to CCM for human intervention.



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Netting		User highlights those items to net. GCCM will log a net_id to the resultant combined message as well as the individual items. GCCM will change Status to 'Netted'							
Payments									
Ref Id	Message Type	Bank	Bank Account	debit/credit	Amount	Currency	Value Date	Net ID	Published External Status
001A	MT202	Chase		12334 debit	-100000	USD	July 21, 2004	N001	Netted
Receipts									
Ref Id	Message Type	Bank	Bank Account	debit/credit	Amount	Currency	Value Date	Net ID	Published External Status
033B	MT210	Chase		12334 credit	74000	USD	July 21, 2004	N001	Netted
Resultant net message									
MT202	Chase			12334 debit	-26000	USD	July 21, 2004	N001	

#### 4.3.7.1.1. Rules for Netting

- For those items that users have selected to net, GCCM has to validate that the following fields are the same before netting could take place:
  - Value date
  - Currency
  - Counterparty/customer
  - Payment Channel
  - Agent bank
  - Bank account number
  - Legal entity
- Netted messages should create final messages as per the following table:

Message Types	Payment or Receipts	GCCM/ User Option	Resultant payment should be
All 103s	Payments (Non-financial institutions)		103
All 202s	Payments (Financial Institutions)		202
All 210s	Receipts		210
103s and 202s	Payments (Non-Financial and Financials)	Default of 103 Provide Option for User to select	Default 103; override by user option
103s and 210s	Payments > Receipts		103
	Receipts > Payments		210
202s and 210s	Payments > Receipts		202
	Receipts > Payments		210

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- Where the payment instructions for the selected messages are not the same, the list of options should be flagged to the user and they should be request to append the correct / appropriate details
- Field 70 & 72 should be merged and details of gross flows that created the net should also be appended to the additional field.
- Exception to the above fields being the same is for internal transactions where the same counterparty/customer exists across multiple companies. In this situation, provide user the option to select ABA#, Name of Bank, Account number or Name on account. Once done, this additional condition would have to be the same along with the above specified fields to satisfy all criteria for netting.
- Where the urgency settings for the selected messages are not the same, the highest should apply for the netted item.
- Once the transactions are netted, the status should change to show as netted.
- A netted id of the resultant (new) message should be appended to the individual underlying records. This net id should be passed to GSSR.
- The net item should then be inserted back into the Release queue in the appropriate ordering. Net / split items should be ineligible for auto release to ensure second touch always happens.

#### **4.3.7.2. Automated Process for Netting**

The automation of the netting process will be a long term GCCM goal. Therefore at this stage, the netting will be done on a manual basis. Detailed specifications for automated netting will be done at that stage. Netting could only be performed if the counterparty agrees.

#### **4.3.7.3. Un-Netting (Unbulking)**

A user will either highlight items from a release queue and select un-netting or from the netting screen input counterparty/customer and/or currency to identify flow that needs un-netting. User will unselect or uncheck a netted box and click ok.

Once the transaction is affirmed, the net\_id will be removed from the original individual transactions and the resultant combined message. The system should:

- Change the status from 'Netted' to 'Unnetted'
- Re-insert the original individual transactions in the Release Queue.
- Remove the combined resultant message from the Release Queue.
- Mark the combined resultant message transaction for 'DELETION' or 'NOT to be Released' so that it gets cleaned out as part of the nightly process.

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Note once released a bulk message cannot be amended through the system though could allow cancellation.

#### 4.3.7.4. Splitting

Items that have been selected for splitting at the Intra-day Release phase will result in multiple messages being created from a single record. User will select the item to do the split.

<u>Initial Payment</u>						
<u>database</u>						
Bank	bank account	debit/cred	Amount	CCY	Value Date	Ref ID
Chase	12345	debit	\$1,000,000,000.00	USD	July 17, 2004	001F

<u>split</u>																						
Chase; account 12345	-\$1,000,000,000.00		<div> <div>To Generate Payments</div> <table border="1"> <tr><td>-\$250,000,000.00</td></tr> <tr><td>-\$250,000,000.00</td></tr> <tr><td>-\$300,000,000.00</td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td>Residual</td></tr> <tr><td>-\$200,000,000.00</td></tr> </table> </div> <div> <table border="0"> <tr> <td>S1001F</td> <td><input checked="" type="checkbox"/> Check Box 4</td> </tr> <tr> <td>S2001F</td> <td><input checked="" type="checkbox"/> Check Box 5</td> </tr> <tr> <td>S3001F</td> <td><input checked="" type="checkbox"/> Check Box 6</td> </tr> </table> <div> <div>User has to click OK before payments are generated</div> <div> <div>This residual amount will go down as each of the entered split payments are ok</div> <div>If user wants to unsplit an item, the residual will increase</div> </div> </div> </div>				-\$250,000,000.00	-\$250,000,000.00	-\$300,000,000.00						Residual	-\$200,000,000.00	S1001F	<input checked="" type="checkbox"/> Check Box 4	S2001F	<input checked="" type="checkbox"/> Check Box 5	S3001F	<input checked="" type="checkbox"/> Check Box 6
-\$250,000,000.00																						
-\$250,000,000.00																						
-\$300,000,000.00																						
Residual																						
-\$200,000,000.00																						
S1001F	<input checked="" type="checkbox"/> Check Box 4																					
S2001F	<input checked="" type="checkbox"/> Check Box 5																					
S3001F	<input checked="" type="checkbox"/> Check Box 6																					

A box should open showing the amount of the item to be split, with an input box and a list of the payments to be generated and total left.

Users will then input the size of the first payment and okay, this instruction should then populate the to-be generated list and the total left should reduce. Users should be free to continue adding individual payments until they are okay with the remaining amount, which will become a payment as well to ensure full amount is available for release. At this point the to-be generated list of instructions and an instruction representing the total left should be inserted into the Intra-day Release queues with the same format and urgency as the original item.

Users should be able to highlight an item in the to-be generated list and delete it. The total left should be amended by the amount cancelled.

The resultant new message will be sent back to the queue for release with the appropriate priority. Note that to ensure the process is properly controlled, especially as the system may allow cross netting, the process of netting and splitting should require two separate users (or four eyes). Specifically CM User 1

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would net / split messages and then a second distinct CM User would have to release the resultant message(s). In fact net / split items should be ineligible for auto release to ensure second touch always happens.

<u>intraday release queue</u>			Original Payment Amount	Split Payment Amount		Ref Id	Split Ref Id
MT 202	Chase	12345	-\$1,000,000,000.00	-\$250,000,000.00 USD		July 17, 2004 001F	S1001F
MT 202	Chase	12345	-\$1,000,000,000.00	-\$250,000,000.00 USD		July 17, 2004 001F	S2001F
MT 202	Chase	12345	-\$1,000,000,000.00	-\$300,000,000.00 USD		July 17, 2004 001F	S3001F
MT 202	Chase	12345	-\$1,000,000,000.00	-\$200,000,000.00 USD		July 17, 2004 001F	

The SSIs including additional data fields should be replicated across the split and residual messages. In addition the original messages amount and reference should be appended into the additional data field.

Once the items are in the in release queue it should be possible to highlight split items and reverse the splitting.

#### Notes

1. GCCM needs to keep track of splitting and unsplitting.
2. It should ensure that the sum of all splits + residual = original amount.
3. If there are splits and none of the whole has been released, allow cancellation but adjust for residual.
4. If there are splits and one of the splits has been released, do not allow cancellation of the whole. Cancellation of the individual amounts should be allowed.
5. By certain point of time during day, alert message to user if sum of splits released <> original amount.
6. Users should not be able to net a split item.
7. Users should be able to unsplit items; if part of the split has been released items will be unsplit to the total less the already released amount (Using example 250 released; unsplit creates 750 single amount)

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#### 4.3.7.5. Reporting

At the end of each day GCCM to review that day's payment traffic and identify currency and USD payments that were sent to or receipts that came from the exact same SSIs or to and from the same GARM number. Reports would be generated showing all possible net combinations.

In addition users should be able to an individual GARM id (Lehman customer account) and External Bank Account Number (option to select on Customer Bank Name or Customer Bank Account Number or ABA number) and review the netting options that weren't utilised for an individual GARM id.

Summary

Local Currency Amounts									US\$ Equivalent Amounts		
GARM id	External RW Account	Agent Bank	Currency	Customer Bank Account #	Customer Bank	Payments	Receipts	Total Net	Payments	Receipts	Total Net
123456	12345	Chase	USD	11111	BONY	(1,000,000.00)	2,500,000.00	1,500,000.00			
213457	88883334	Citibank	SING	222222	BONY	(1,000,000.00)	350,000.00	(650,000.00)			
213457	88884443	Citibank	TWD	222222	BONY	(2,000,000.00)	6,578,000.00	4,578,000.00			
9392933	12345	Chase	USD	33333	Fleet	(15,000,000.00)	20,000,000.00	5,000,000.00			
948493	12345	Chase	USD	888888	HSBC	(25,300,000.00)	15,000,000.00	(10,300,000.00)			
948493	34567	Chase	GBP	888888	HSBC	(3,050,000.00)	3,000,000.00	(50,000.00)			
948493	87789	Chase	FRF	999999	HSBC	(6,404,000.00)	4,000,000.00	(2,404,000.00)			
948493	99344	Chase	DEM	888888	HSBC	(74,324,000.00)	6,400,000.00	(67,924,000.00)			
948493	77356	Chase	CHF	999999	HSBC	(1,745,000.00)	740,000.00	(1,005,000.00)			
Double-click to drill down to see details											

Detail

Payments

Date Format needs to be consistent with Region

GARM id	Currency	Account #	Customer Bank	Value Date	GCCM ref id	Ref id	Net Id	Split id	Local Currency Amount	Agent Bank Name	Agent Bank Account #	Source system ref id	Source system
948493	GBP			08/12/04									
948493	GBP			08/12/04									
948493	GBP			08/12/04									
948493	GBP			08/12/04									
948493	GBP			08/12/04									
948493	GBP			08/12/04									
GBP Payments Total									(3,050,000.00)				
Receipts													
948493	GBP			08/12/04									
948493	GBP			08/12/04									
948493	GBP			08/12/04									
GBP Receipts Total									3,000,000.00				

Will be populated with individual records denominated in GBP. If USD Equivalent is clicked, then the report will show an extra column " USD equivalent amount". Total on Local Currency Amount by currency within GARM. Total should match the number on the Summary report.

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#### 4.3.8. Book and Real World Cash Balances

GCCM will host a large number of external accounts, currently approximately 3000, that are managed through a variety of processes. In particular differing accounts are funded versus their actual real world balance at the end of day, actual real world balance at start of day, end of day expected book balance, projected actual balance or some combination of these processes.

To cope with this variety it will be simpler will for GCCM to track both real world and book balances for all the external accounts and let the users of GCCM responsible for Funding accounts to decide the appropriate balance to use when inputting / creating FUND movements. In practice individual accounts will continue to be funded against the appropriate balance for the controls and information for the account.

In addition the system should be able to present running balance data based on the current real-time book balance or real world start of current / end of prior of day balance. In time GCCM D&R should be able to take in intraday external account balance updates and show these alongside the current system generated balances.

Therefore as part of the tracking of activity on accounts, for each account GCCM D&R should record

- Start of Day Book Balance
- Real World Start of Day Balances

And be able to track / create:

- Running Intraday Balances based on Booked Activity starting from Book Balance
- Running Intraday Balances based on Booked Activity starting from Real World Balance
- End of Day Book Balance for Accounted activity

In addition for accounts where external information is available, GCCM should also be able to create

- Running Intraday Balances based on Settled Activity starting from Book Balance
- Running Intraday Balances based on Settled Activity starting from Real World Balance

And / or track

- Actual Intraday / End of Day Balances

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#### 4.3.8.1. Sources of Information

The following table list source / calculation method to be used for each for the above balances

Balance	Source
Start of Day Book Balance	Prior working day's End of Day Book Balance for Accounted activity
Real World Start of Day Balances	<p>GSSR for current start of day balances for the external accounts.</p> <p>GCCM should also record date of last statement feed to show whether balance is current real world or last known GSSR balance.</p> <p>Note where accounts have been grouped on GSSR the individual sub-account statement balances will be required.</p>
Running Intraday Balances based on Booked Activity starting from Book Balance	<p>Calculation process that should continually update (note for usability users should be able to freeze balance on screen). Balance would be net of:</p> <ul style="list-style-type: none"> <li>• Start of Day Book Balance</li> <li>• All individual payments and receipts booked or assigned to particular nostro</li> <li>• Any Projected booking figure</li> <li>• Any FUND entries already booked across account</li> </ul>
Running Intraday Balances based on Booked Activity starting from Real World Balance	<p>Calculation process that should continually update (note for usability users should be able to freeze balance on screen). Balance would be net of:</p> <ul style="list-style-type: none"> <li>• Real World Start of Day Balances</li> <li>• All individual payments and receipts booked or assigned to particular nostro</li> <li>• Any Projected booking figure</li> <li>• Any FUND entries already booked across account</li> <li>• If available any currently failed activity carried over from prior day</li> </ul>
End of Day Book Balance for Accounted activity	<p>Calculation process that should continually update (note for usability users should be able to freeze balance on screen). Balance would be net of:</p> <ul style="list-style-type: none"> <li>• Start of Day Book Balance</li> <li>• All individual payments and receipts booked or assigned to particular nostro that have been Accounted for. That is released to accounting.</li> </ul>

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	<ul style="list-style-type: none"> <li>Any FUND entries have been Accounted for.</li> </ul>
Running Intraday Balances based on Settled Activity starting from Book Balance	<p>Subset of balance that is used for Running Intraday Balances based on Booked Activity starting from Book Balance (if everything settled and there was no outstanding projection amounts then balances would agree.)</p> <p>Calculation process that should continually update (note for usability users should be able to freeze balance on screen). Balance would be net of:</p> <ul style="list-style-type: none"> <li>Start of Day Book Balance</li> <li>All individual payments and receipts that have settled and so Matched</li> <li>Any FUND entries that have settled and so Matched</li> </ul>
Running Intraday Balances based on Settled Activity starting from Real World Balance	<p>Subset of balance that is used for Running Intraday Balances based on Booked Activity starting from Real World Balance (if everything settled and there was no outstanding projection amounts then balances would agree.)</p> <p>Calculation process that should continually update (note for usability users should be able to freeze balance on screen). Balance would be net of:</p> <ul style="list-style-type: none"> <li>Real World Start of Day Balances</li> <li>All individual payments and receipts that have settled and so Matched</li> <li>Any FUND entries that have settled and so Matched</li> <li>Any prior failed activity carried over that has settled and so now Matched</li> </ul>
Actual Intraday / End of Day Balances	<p>Expected to be external feed of current balance information with time stamp at which last update received.</p> <p>Should also allow for ability for users to input balance with a time stamp.</p>



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#### **4.3.9. Process Name: On line Reporting – Ref 1.3.2.1**

This section defines the screens that the various users will interact with the core system via and outlines the basic functionalities for the various user classes. In particular the screens will be used to track the funding positions for the Firm overall and by individual external account. It is worth noting that these screens will also form the basis of further Modules of GCCM and should be able to incorporate more than just cash balances in the position screens and disbursement and receipts flows as users drill down.

The various screens will have a similar look and feel but will show different representations of the data in the D&R database with the following three basic views:

1. Currency Positions
2. Account Position Reporting
3. Account Activity Reporting

Depending on the users set-up they will open to one of above three default views and will have access to the accounts they are authorised for. This may range from one Internal Business account for a business user to all accounts for a Treasury user. As the layouts will be web delivered a user with access to more than one layout should be able to run them simultaneously through multiple web browsers.

Users should be free to select their own opening screens and the system should remember this for next time the user access the system. More specifically though users may have access to a large number of accounts they should be able to select sub-sets of accounts (almost as if favourites) that they can focus in on by creating their own version of the following three screens. This will be particularly useful in CCM, where the funding of a large number of external accounts is assigned to a particular group and then further allocated to members of the group but with the understanding that any one member of the group can cover for the others. Hence a particular user would have access to an entire range of accounts yet focus on a limited more manageable number.

It is for example expected that the Cash and Collateral Management would open to the Account Positions view with a default view showing all real world nostro accounts in the region of the user.

The screens should be enabled so that users can add in formula driven columns from a predefined list for major calculations and / or special functions or create their own simple calculations based on just addition or subtraction.

Note at the lowest level of drill down, that is transaction level reporting through a single account, each flow or transaction should represent what it is, that is whether it is a payment a funding movement or for later modules a DVP or Financing trade. To begin with this list of types will be probably limited to:

- PAY for an external payment / receipt
- FUND for the funding of a real world nostro
- INTPAY for an Internal payment / receipt
- PROJ for a projected figure
- REC for an entry created to clear a nostro REConciliation break

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Though it may be worthwhile considering further sub-divisions, for example source of request or margin posting, etc.

#### **4.3.9.1. Standard Views**

Though the on-line reporting should be flexible to allow users to define specific groupings of accounts and messages that they include in the views as laid out below, a series of preset unalterable set of views should also exist so that various users can consistently bring up the same set of data and therefore aggregated positions.

This is particularly important in Treasury where the Funding Desks and Cash Management will both be looking at account and balance information. This is because for the funding of external accounts, a difference in the resulting numbers due to the use of dissimilar parameters in the views could result in inaccurate funding of the Firm's positions and increased interest burn.

#### **4.3.9.2. Currency Position Reporting**

This layout will allow a user to view traffic by currency and the current funding position for that currency with drill down to the external accounts within a currency. It is expected that the Treasury Funding Desk would open to the Currency Positions view.

The screen should open to a menu bar and a list of currencies available to the users with the current date set as the value date for display. GCCM will need to net activity in its database to create an overall currency balance for all real world accounts of that particular currency except those that have been explicitly excluded.

##### **4.3.9.2.1. Excluded or Restricted Accounts**

Certain external accounts will or will have accrued cash balances over time that may not be available to the Firm for funding other activity within the Firm.

An example of such an external account would be an exchange margin account, where funds have been placed with the exchange to support initial and variation margin for open positions and to return funds from the margin account would cause the Firm to be under collateralised at the exchange.

These external accounts should then be excluded from the currency summary positions and segregated during the drill down to individual accounts to show the funds are not readily available.

##### **4.3.9.2.2. Suggested views**

The net balances of the items in cash terms should be displayed against each currency using book opening position and GSSR supplied balance as the starting points.

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During later modules the value of available collateral in a currency should appear alongside the free cash numbers that will be represented as a result of D&R activity.

Currency	Book Value Cash		Account Balance Cash	
	SOD Cash	Current Projected EOD Cash	SOD Cash	Current Projected EOD Cash
	SOD – Start of Day			
	EOD – End of Day			

By clicking on book value of an account balance the users should be able to drill down to show rolling balance information based on the criteria of book balances or real world account balances being used (note SOD on S would have been EOD on S-1).

Currency	Prior day	Current Day	Forward Day 1, etc
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The prior day's end of day balances and the net balances for the next five days forward data activity should be shown to the left and right of the currently selected value date, as appropriate, to give a run of seven working days' balances alongside each other. The user should be able to amend which seven days' balances are shown.

The user should be able to double click on a date to split out by status the net of the items in each currency for the value date double clicked on. The total should move to the right.

Currency	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total
----------	--------------	------------	--------	--------------------	---------	---------------	-------

The user should be able to click on a currency to drill down to show the split for that currency by real world nostro (grouping because they are at same agent). Accounts with items that could effect the balance (E.g. pending cancellations) should be highlighted a different colour.

Currency							
Nostro group	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total

Items not yet assigned to an external nostro should be shown as a distinct line in the drill down. Restricted or exclude accounts could be represented as a specific nostro group.

If nostros are grouped, then the user should be able to click down again to bring up the individual nostro accounts.

Currency							
Nostro group							
Account	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total

Once the individual nostro accounts are highlighted the user should be able to drill down to the individual items and drill into these as well.

#### 4.3.9.2.3. Example of Drilldown views for currency reporting

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Date		EAME Region							
14-Sep-04									
		Book		Book					
Ccy	Book SOQ Balance	Book SOQ Funding Required	Book SOQ Balance	Book SOQ Funding Required					
CHF	74,175.18	40,538.18	21,040,538.18	40,538.18					
CZK	155,205.89	155,205.89	155,205.89	155,205.89					
DKK	24,208.52	3,202.54	11,610,202.54	3,202.54					
EUR	28,661,794.26	704,583,776.60	844,434,798.49	704,583,776.60					
GBP	1,975,809.40	86,112,492.00	291,755.27	86,112,492.00					
HUF	175,816.60	175,638.60	175,638.60	175,638.60					
ILS	4,730.29	88,085.85	88,085.85	88,085.85					
KWD	-	-	-	-					
LTL	-	-	-	-					
LYL	-	-	-	-					
NOK	77,646.71	8,143.45	2,101,887.55	8,143.45					
NZD	-	-	-	-					
PLN	855,700.37	15,670.70	15,670.70	15,670.70					
RON	-	-	-	-					
SEK	17,358.34	1,293,817.53	111,025,843.49	1,293,817.53					
TRL	-	-	36,832,605,553,090.00	-					
USD	58,541,318.83	524,305,838.90	505,090.00	524,308,392.80					
14-Sep-04									
Currency	Account Ref	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total	
GBP	HSDC Reporc		291,755.27	1,427,230.37	10,575,120.00	125,673,120.00	87,053,074.95	40,000,000	347,446,304.39
	HSDC MAIN		15,800.00	2,506,000.00	174,591,230.00	125,881,120.00	100,000,000.00	1,634,302	153,876,412.00
14-Sep-04									
	Ccy	GBP							
	Deal Type	Originator	GC/CM Id	Source Trade ID	Deal	Confirmed In	Confirmed Out	Status	
	PAY	RTD - FX Acct 12345		123456	31243 - Goldman Sachs	1912318		0 NEW	
	PAY	RTD - PB Acct 98764		456789	1037838U	2553.35		0 NEW	

#### 4.3.9.2.4. Euro-in currency reporting

Note if applicable the user should be able to double click on Euros to split out by status the net of the items in each Euro-In currency and Euros for the value date shown.

#### EURO Breakdown

In Currency 1	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total
In Currency 2	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total
EUR	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total

The user should then be able to drill down again to see the underlying transactions as above, but the system should show the original currency amounts rather than the Euro equivalent.

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#### 4.3.9.3. Account Position Reporting

To allow a user to view the net balance and traffic through a class of Accounts, with the flexibility to filter to a specific grouping

The screen should open to a menu bar and a list of account type groupings (intercompany account, nostros etc) available to the users with the current date set as the value date for display. GCCM will need to net activity in its database to create a running balance by account group. The account group the user opens to will be set by them and should be flexible enough to be reset easily and allow ranges such as all accounts, general groups such as LBI Real World Nostro or even specific individual accounts such as LBI's intercompany accounts in GCCM with LBHI.

The net balances of the items in cash terms should be displayed against each account grouping by currency. The user should also have the ability to request a USD equivalent number alongside the currency total. The prior day's end of day balances and the net balances for the next day should be shown to the left and right of the currently selected value date, as appropriate, to give a run of three working days' balances alongside each other. The user should be able to amend which days' balances are shown.

Account Grouping	Currency	Prior day	Current Day	Forward Day 1
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The user should be able to double click on a date to split out by status the net of the items in each currency by the status for the value date double clicked on. The total should move to the right.

Account Grouping	Currency	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total
------------------	----------	--------------	------------	--------	--------------------	---------	---------------	-------

Items not yet assigned to an external nostro should be shown as a distinct line in the drill down.

The user should be able to click on an account grouping to drill down to show the split for that each account. Accounts with items that could effect the balance (E.g. pending cancellations) should be highlighted a different colour.

Account group								
Account	Currency	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total

The user should be able to filter by currency.

Account group								
Currency								
Account	Start of Day	Projection	Repair	Pending Settlement	Settled	Accounted for	Total	

Once the individual accounts are highlighted the user should be able to drill down to the individual items and drill into these as well.

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#### 4.3.9.4. Account Activity Reporting

This section outlines how to allow a user to view traffic through the Internal Business Accounts within their grouping by logging onto Lehman Live. It is for example expected that the Operations and Business Users would open to the Account Activity screen view.

The screen should open to a menu bar and a list of accounts available to the users with the current date set as the value date for display. Accounts with items pending repair should be highlighted a different colour to currently 'clean' accounts.

The user should be able to click on an account to drill down to the activity passing through that account for the selected value date. A status mark should be shown alongside the individual items and again items pending repair should be highlighted a different colour.

Accounts should be laid out along the lines of:

<i>Account Number by EOD</i>	<i>Account Title</i>	<i>CCY</i>	<i>Cumulative Historical Funding (SOD Balance)</i>	<i>Current Days Funding</i>	<i>Net Funding</i>
----------------------------------	----------------------	------------	--	-----------------------------	--------------------

The user should be able to drill down on an account to view the activity that has created the current balance:

<i>Account</i>	<i>GCCM Ref</i>	<i>Source Ref</i>	<i>Beni</i>	<i>CCY</i>	<i>Amount</i>	<i>Value Date</i>	<i>Status</i>
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#### 4.3.9.5. Functions Available in Reporting Menu

This section outlines the functions that a user could have access to from the on-line reporting screens.

By default all users should be allowed to change the view through which they see the data for the accounts they have access to and they should be able to click on an account to drill down to the activity passing through that account for the selected value date. A status mark should be shown alongside the individual items and again items pending repair should be highlighted a different colour.

In turn all users should be able to click on an item to bring up on screen. The screen should show the current status and version of the request in full, potentially over a number of pages within the screen. If an item has been confirmed, the record should show the relevant payment references and a copy of the outgoing and incoming messages if appropriate. If the user selected item is awaiting repair and the user has the requisite rights, they should have the option to transfer the message to a repair queue / request edit rights to the message and so be transferred to the amendment and approval page with the item.

The user should also have access to the following functions depending on the user rights once they have highlighted a record:

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4.3.9.5.1. Cancel or confirm / reject cancellation of a record;

Cancelling an item should cause it to go into a pending cancellation confirmation status and all activity in GCCM on this record should pause. *This should update the status of the item particularly for funding purposes.*

- If the cancellation of an item is rejected, processing should continue as normal.
- If the cancellation of an internal request is confirmed, it should be immediately reversed.
- If the cancellation of an external request is confirmed and the external message has not been sent then any external message should be cancelled. Funds should reverse out of balance reporting and accounting with next available funding value date for the currency – this may require user intervention from CM to confirm reversal date.

This means that it is possible that an item cancelled before its message goes out will need to generate accounting for the expected settlement value date with a reversal booked for the next funding value date. (Interest accruals on the funding would continue until reversal processed.) These two dates could be the same or not.

- If the cancellation of an external request is confirmed and the external message has been sent then

For incoming money, the booking should reverse out of balance reporting and accounting with next available funding value date for the currency – this may require user intervention from Cash Management to confirm reversal date. (Interest accruals on the funding would continue until reversal processed.)

For payments, the booking should be flagged with the requirement that a cancellation message will need to be sent. The sending of the cancellation message should be noted on the trade (this info should be passed to GSSR). Nothing else occurs at this point. Once funds are returned an offsetting item with the value date of the receipt can be passed by the appropriate Reconciliation team.

GCCM D&R should if possible generate and send the cancellation message.

4.3.9.5.2. Amend or confirm / reject amendment of a record;

Requesting access to amend a record should cause it to go into a pending amendment status and all activity in GCCM on this record should pause.

Normal users should have access to amend SSIs only on external requests. These changes will need to be approved by the appropriate number of users for the internal Business Account.

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For other fields the users should normally cancel and rebook. If an incorrect internal Business account has been quoted the user can pass an internal movement for the correct internal Business Account to credit the incorrect account or cancel the request and rebook.

- CM users should have access to all fields including amend SSIs, value dates and amount. It is their responsibility to ensure changes can be funded for. Should the amendment include back-valuation, the back value process should be followed for accounting and when the message is generated.
  - For internal requests value and amount fields can be amended, Beneficiary account should not be amended. To amend a Beneficiary the users should cancel and rebook.
- If the amendment of an item is rejected, processing should continue.
- If the amendment of an internal request is confirmed, the original booking should be reversed and the amendment passed
- If the amendment of an external request is confirmed and the external message has not been sent then any external message should be cancelled. The external message should then regenerate with amended SSIs.
- If the amendment of an external request is confirmed and the external message has been sent then

For incoming money, the booking should update details on the record but do not generate a new message. Intraday Reconciliation and Accounting should then proceed as appropriate for the external nostro in use.

For payments, the booking should be flagged with the requirement that an amendment message will need to be sent. The sending of the amendment message should be noted on the trade (this info should be passed to GSSR). Intraday Reconciliation and Accounting should then proceed as appropriate for the external nostro in use.

GCCM D&R should if possible generate and send the cancellation message.

#### 4.3.9.5.3. Raise a query on an item.

Users should be free to raise queries on entries to their Business accounts that they don't understand or recognise. From within the transaction, D&R should allow users to raise a request that auto create an email about the currently selected item from the user's MS Outlook email account. Basic details of the item should be appended to the email with the user free to insert additional text.

The query should be sent either to originator / amender of a request if known, a nominated group for the originator / amender of a request or a general group such as Cash Management or Firm Balancing; where originator could be an individual if manually input or a user group for a system fed item.



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#### 4.3.9.5.4. Search Facilities

Within either the summary or detailed screens, the user should be able to select another value date and refresh the screen to bring up the account history for that value date. Once in an account the user should be able to bring up multiple value days, in date order, on one screen. The user will be restricted at this point to the data stored in the production database.

The user should also be able to conduct a search for a request or receipt across any or one of the select number of the accounts he has access to, based on the minimum criteria possible. Finally users should also be able to search for records created, authorised, etc. by a particular user or source system across accounts.

For trend or longer term investigations the users should be directed out of the production database to the archive or reporting database.

#### 4.3.9.5.5. Initiate Auto-Funding Process – detailed in Section 4.3.8.2

### 4.3.9.6. Effect of Back Valued Requests

D&R is designed to allow back valued items to be sent for processing. For internal requests back-valuations will be processed as if they had occurred at the time. External requests will be processed on a best efforts basis and any external costs to complete the back valuation will be passed back to the originator of the requests.

For account reporting back-valuation requests will be used to restate the end of day and subsequent start of days for internal accounts (e.g. originator of request and beneficiary of internal only movement) but for external accounts will be shown as an adjusted / back-valued figure in the next available funding day.

#### 4.3.9.6.1. Internal accounts

Specifically D&R will insert item into the nearest date live in system for the requested valued date. So as the live D&R database will maintain five value days prior to current value date in line with DBS, a back valued item less than five days old would be inserted into cash-flows for the relevant date. The balances for the subsequent end of day and start of day balances should then be restated up to the current value date.

For items older than five days these should be inserted into cash-flow for the oldest date on the live system. The balances for the subsequent end of day and start of day balances should then be restated up to the current value date.

To allow for this split D&R should record value date of item (for interest purposes), date posted (date shown in cash-flow) and the requested or effective date of the item. Note for an item submitted today for a currency where today was still a valid funding day then all three dates would record today's date.

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4.3.9.6.2. External accounts

To ensure the external accounts can be correctly funded, back-valued external payments should be shown in the current funding days cash-flows as a new item annotated with requested value date; that is start and end of day balances for interim days should not get restated and the back-valued item is only reflected in current day and going forward for reporting purposes.

Note D&R should request authorisation for any bank charges for back-valuing the request from the business so that these can subsequently be attributed to business once debited.

4.3.9.6.3. Example

For example assume today is Monday August 2<sup>nd</sup> and a payment is sent for value Thursday July 29<sup>th</sup> across an External Account.

- GCCM End of Day balance for 29<sup>th</sup> is not updated on screen.
- Start & End of Day balances for 30<sup>th</sup> are not updated on screen.
- Start of Day balance for 2<sup>nd</sup> is not updated on screen.
- Payment is inserted into cash-flows 2<sup>nd</sup>, with annotation that an item is back valued.
- Payment is sent with value today.
- Authorisation of back-valuation charges is requested from originator / group
- Amendment is sent to bank requesting value date change

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#### **4.3.10. Process Name: Funding Accounts – Ref 1.3.2.2**

To create a process to allow the funding of the Firm's real world nostros accounts and to use this process to create a way for the system itself to by propose movements to fund individual or ranges of real world nostros accounts. The system should allow manual funding of nostro accounts as well as the automatic funding of nostro accounts.

##### **4.3.10.1. Manual Funding**

A Cash Management user of GCCM should be able to easily see and calculate the amount of cash a real world nostro requires to support the payment activity or would be long following receipts at a given point in the day by reviewing the current and pending items for that nostro account in GCCM. The user should then be able to input a FUND item into GCCM to flatten the nostro account.

The FUND item will be a real world movement between two Lehman external accounts that are on GCCM; cash must move and in this the booking differs from other entries where the beneficiary account is a Lehman account where the default would be accounting journals only.

The Cash Management (CM) user would create the FUND request either via the web page input screen or from within GCCM by first identifying the external account the FUND item should happen against and then requesting a FUND movement.

If the CM user creates the FUND request via the web-site the CM user should ensure that at least the pay and preferable both sides of the required movement are entered. If the CM user creates the request via the GCCM functionality, then the request should come up with amount and value date blank for input by the CM user. This is to allow for intraday funding of an external account where cash may be moved to and from an external account independent of the current actual or projected balance on the account.

The CM user should be able to request the payment of the inputted amount of funds into the external account or to pay the funds from the account. Once the user confirms the FUND request amount, GCCM should identify the external account that the FUND movement will go to / come from for long / short positions respectively. It will do this by ascertaining the Paying (if it exists) or Funding entity for the legal entity the external account being funded resides in and append the settlement details of the real world nostro for the identified entity. If the Paying or Funding entity has multiple real world nostros the nominated default should be chosen.

The CM user should then be offered the opportunity at this point to override the chosen nostro account for any other real world nostro. This is to allow activity to be moved directly between accounts to reduce or net cash flows before funds are transferred back up to main nostro accounts. (For example this may be used to reduce intraday impact of large cash flows when securities have been bought into one depot, moved free to a second, out of where the securities are secured financed and the funds in the second are required in the first.)

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A second CM user should then be required to review and approve the request before the item can be processed any further. At the point of approval a request for the opposite entry (i.e. a pay for a receipt and a receipt for a pay) should be created against the opposing external account in an approved state.

Note when the accounting for the FUND entry is created, the journals should reflect the actual cash movement via any the appropriate funding intercompany accounts rather than assume the default account was chosen.

Both requests should populate the Pending Release numbers for the appropriate external accounts.

#### **4.3.10.2. Automatic Sweep facility**

To speed the process of funding multiple external accounts (real world accounts now total 3000+ and it is labour intensive to manage this amount of accounts) GCCM should have an auto sweep process that can create FUND items.

External accounts may have a target balance and a minimum activity balance both for long and short activity. Where these numbers have been set the system should allow for these when creating the automatic funding numbers. These are expected to work as follows:

- Minimum Short balance – a short balance that is not cost effective to cover for a particular external account (for example a payment would cost USD2 and the balance is only –USD2). If the balance is less than the minimum do not create the FUND item. If the amount is greater (i.e. shorter) then create a item to fund the external account to zero (or the target balance if set).
- Minimum Long balance – a long balance that is not cost effective to cover for a particular external account (similar to above example a long balance of USD2 would not be cost effective to cover). If the balance is less than the minimum do not create the FUND item. If the amount is greater (i.e. longer) then create a item to fund the external account to zero (or the target balance if set).
- Target Balance – a long balance that the external account should be funded to other than zero; expected to be used for minimum reserve requirements. If the balance is less or more than the target fund the external account to the target balance by paying funds from the account if the balance exceeds the target and by paying funds into the account if balance is below the target.

##### **4.3.10.2.1. Excluded or Restricted Accounts**

Certain external accounts will have accrued cash balances over time that may not be available to the Firm for funding other activity within the Firm.

An example of such an external account would be an exchange margin account, where funds have been placed with the exchange to support initial and variation margin for open positions and to return funds from the account would cause the Firm to be under collateralised at the exchange.

These external accounts should then be excluded from the automated funding process.

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#### 4.3.10.2.2. Suggested Process

A CM user should be able to highlight a single, range, group or all external accounts and run the auto sweep function. Note it should be possible to run the process multiple times on a single external account in a working day.

A group could reflect a set of external accounts at an agent that have been set-up to be funded under a netting agreement with the agent. In this case the Fund process would be based on the net balance of all the external accounts in the group and create a single movement rather than a movement per account.

The auto sweep function should then create a series of FUND entries, one per selected external account or group, with the next available payment day given the current time of day for the currency of the external account. As these entries are automatically created the SSIs should default to the Paying (if it exists) or Funding entity for the legal entity of the selected external accounts.

The amount to be funded should also be automatically added and should be the net balance of all items projection or pending still in the system for the given value plus the GSSR supplied start of day balance (or ledger start of day balance, if this option has been selected as part of the account set-up) or the projected SOD balance for forward value date movements.

There should be no override function for either SSIs or amount and the user should be limited to accepting, copying to a manual request or cancelling each proposed FUND entry; with copying effectively the cancelling of the auto record and the creation of a manual FUND item where the amount can be amended.

Once approved each FUND entry should as above create its opposite and insert both flows into the appropriate account numbers and release queues.

#### 4.3.10.3. Impact on Currency Funding

Though this is the correct way to process these FUND entries, because two opposing entries are created per movement, from a currency funding perspective the total net currency position has not changed. Therefore the CM user needs to ensure that the requirement they are funding for is represented in GCCM in some form.

This requirement is easily fulfilled when an account is being funded to cover payments or receipts already in or due to go into GCCM (as their entry adjusts the total currency requirement appropriately), it may not be so easy for the funding of securities depot activity.

##### 4.3.10.3.1. Use of Projection Process – Ref 1.3.2.3

For external depot accounts the underlying funding requirement is unlikely to show in GCCM automatically as DVP trades are not acknowledged by MT900 or MT910s that could be used to create the requirement. Thus for external accounts where the requirement is not automatically input at the

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implementation of GCCM, the CM user must ensure that the appropriate funding number is input into the system.

Therefore the user or the system will need to create a projected requirement in the account that reflects activity that is either yet to be entered into the system or resides outside the system. For the securities depots Module 2 of GCCM should negate the need to undertake this process. Projected requests should be either:

- Manually input into the system using the Projection number facility offered by the web-input process. Note the web-input process should allow these funding (projection) numbers to be loaded into GCCM via the file load process or as individual projection amounts.
- Lifted automatically in aggregate from either the various settlements systems generating the underlying securities traffic for a depot or from an external source.

#### 4.3.10.3.2. Projection Clean-up Process – Ref 1.3.2.4

While external accounts are funded against a projected or manual input it will assist CM users if there is a semi-automated process to update or amend the numbers as further activity is booked creating additional or reduce requirements.

For example on the day prior to settlement, S-1, the securities account may show a requirement to be funded to cover purchases of USD1 billion that is reduced on settlement date as a result of same day financing by one of the CFU or EFG desks. In this case the CM user would have input a requirement of USD1bn on S-1 for S and then updated the requirement on S through the day to provide the Treasury Funding Desk and the automated funding process with a correct currency requirement for the external account and overall position.

This process could either be a forced revalidation of the projection figures at certain points during the day, e.g. half an hour before the normal funding deadline for a currency, the ability to upload amendments to numbers via the web-front end without having to cancel and rebook or a more general clean-up process that removes all projection figures for yet to be funded positions at the start of each day, so users have to re-input.

#### 4.3.10.3.3. Next Day Balance

Where balances have been funded on a projection number – for example a securities account – there will be a difference between the ledger balance excluding the projection number and the actual balance.

Thus there is an open question of how to correctly track the ongoing account balances for these external accounts without creating a separate process to store the projection numbers day on day and then to incorporate this number into the running balances as the true ledger balance will be the combination of the ledger balance in the settlement system and the ledger balance in GCCM. Where the ledger balance in the settlement system represents the book value of the cash settlement of the securities flow and the ledger balance in GCCM represents the book value of the funding of the account.

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In reality though as these accounts are funded to against actual balances (i.e. real world balances) the functionality in the system to define whether the account should be funded to the book or real world balance should allow the funding process to continue. With the users selecting that depot accounts are always funded versus the real world balance either actual or calculated from the advised start of day, booked flow and projection figures. And the ledger balance will simply deviate from the real world balance.

Hence given the split ledger representation of the activity the reporting of particular system breaks for example where the ledger balance and real world balance differ by more than the known unpreadvised, depot balances would be excluded automatically.

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#### **4.3.11. Incoming Bank Confirmations for Matching and Applying Funds – Ref 1.4.1**

Up to this point both requests for payments and notifications of receipts are handled in the same way for all currencies. In this matching process however, there will be two different processing models which will specifically address the handling of Accounting.

Under the Simple Process accounting entries will be generated regardless of whether there is a confirmation from the bank for a payment or an acknowledgement of a credit for any pre-advice. For accounts selected to run via the Complex process, accounting entries will be generated only if there is a confirmation from the bank of a payment or a credit that can be applied to an Internal Business account or similar.

In order to determine which processing model will be followed, the setup will be determined at the currency level with an override at the individual GCCM account level, as part of the Account Table.

##### **4.3.11.1. Controlling the Generation of Accounting Records**

Both models rely on the same basic matching engine, it is just that under the Simple process all real world requests can be accounted for at the close of the settlement day and under the Complex process accounting can be restricted to only acknowledged payments and applied credits.

###### **4.3.11.1.1. The Simple Process**

In this model any incoming acknowledgements will be used but will not hold up the accounting of individual entries. And it is assumed that requests are funded pending settlement regardless of fails.

This model is likely to be used for currencies which do not currently have the same day liquidity to allow the funding of fails and accounts where incoming acknowledgements are unavailable or unreliable.

During the defined business day for the specific currency of an external account, entries should be matched if a notification arrives. Once matched, the status of the request will change to matched and the item should be accounted for.

A list of notifications of unpre-adviced items will be available to the user to review if required. Unapplied debits and receipts can be passed to Suspense if required.

At the end of the defined business day for the specific currency of an external account, requests that have not been matched should be accounted for. Unapplied items should remain on the nostro.



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#### 4.3.11.1.2. The Complex Process

In this model any incoming acknowledgements will be used and the accounting will be dependent on the acknowledgment being received either in GCCM or by a CCM user manually acknowledging the item. And it is assumed that requests are funded pending settlement but fails can be funded for.

This model is likely to be used for currencies which have the same day liquidity to allow the funding of fails and nostro accounts where incoming acknowledgements are available and reliable.

During the defined business day for the specific currency of an external account, entries should be matched if a notification arrives. Once matched, the status of the request will change and the item should be accounted for.

A CCM user should have the ability to put an item into a matched status overriding the lack of external notification. Two options should be available to the CM user, these are:

- Option A) Confirm item to source systems and create accounting.
- Option B) Confirm item to source systems but do not create accounting, instead put item on hold. The item should remain open until an electronic confirmation arrives or the CM user updates the status to option A above, say next day, at which point the accounting should be created in GCCM as per normal.

Option B will create a reconciliation break for the owner of the Internal Business Account if they create their accounting either as a result of the confirmation or in advance of the confirmation.

A list of notifications of unpreadvised items will be available to the user to review from which it will be possible to be able to create bookings back to an Internal Business account. Unapplied debits and receipts can be passed to Suspense if required.

At the end of the defined business day (could be shorter than real world account opening) for the specific currency of an external account, requests (*Open Question treat payments and receipts the same?*) that have not been matched should be reversed out (by rejecting request) of the real world nostro, associated funding numbers and the originating internal Business Account (*Open Question reverse or propose reversal for CCM approval so that items can be investigated first?*) and notification sent to the originating system that this is the case.

#### 4.3.11.1.3. Handling of Bulk, Split or Unapplied Items

- 1) Bulk items should be accounted for if the notification of the net movement has been received.

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Individual Payments									
Ref Id	Bank	Bank Account	debit/credit	Amount	Currency	Value Date			
001A	Chase	12334	debit	100000	USD	July 21, 2004			
033B	Chase	12334	credit	74000	USD	July 21, 2004			
0446Q	Citibank	678909	debit	250000	USD	July 21, 2004			
555J	Citibank	678910	debit	300000	USD	July 21, 2004			
0546Q	Citibank	678909	debit	550000	USD	July 21, 2004			

Bulked									
database									
Ref Id	Bank	Bank Account	debit/credit	Amount	Currency	Value Date	Net ID		
001A	Chase	12334	debit	100000	USD	July 21, 2004	AA11		
033B	Chase	12334	credit	74000	USD	July 21, 2004	AA11		
0446Q	Citibank	678909	debit	250000	USD	July 21, 2004	AB22		
555J	Citibank	678910	debit	300000	USD	July 21, 2004			
0546Q	Citibank	678909	debit	550000	USD	July 21, 2004	AB22		

bulk items to be sent									
MT 202	Chase	12334		-16000	USD	July 21, 2004	AA11		
MT 202	Citibank	678909		-800000	USD	July 21, 2004	AB22		

Matching									
database									
Ref Id	Bank	Bank Account	debit/credit	Amount	Currency	Value Date	Net ID	Match Seq	
001A	Chase	12334	debit	100000	USD	July 21, 2004	AA11	1	
033B	Chase	12334	credit	74000	USD	July 21, 2004	AA11	1	
0446Q	Citibank	678909	debit	250000	USD	July 21, 2004	AB22	1	
555J	Citibank	678910	debit	300000	USD	July 21, 2004		1	
0546Q	Citibank	678909	debit	550000	USD	July 21, 2004	AB22	1	

bulk items sent									
MT 202	Chase	12334		-16000	USD	July 21, 2004	AA11		
MT 202	Citibank	678909		-800000	USD	July 21, 2004	AB22		

confirmation of payment									
MT 900	Chase	\$16,000.00	12334	July 21, 2004	USD				
MT 900	Citibank	\$800,000.00	678909	July 21, 2004	USD				
MT 900	Citibank	\$300,000.00	678910	July 21, 2004	USD				

note bank, RW number, amount and currency name

2) For split items the portion of the item that has matched should be accounted for.

Initial Payment									
database									
Bank	bank account	debit/cred	Amount	CCY	Value Date	Ref ID	Split ref id	Urgency	Split Amount
Chase	12345	debit	\$1,000,000,000.00	USD	July 17, 2004	001F	S1001F S2001F S3001F	Y	\$250,000,000.00 \$250,000,000.00 \$300,000,000.00

split									
Chase; account 12345		\$1,000,000,000.00	To Generate Payments						
			\$250,000,000.00	S1001F	<input checked="" type="checkbox"/>	Check Box 4			
			\$250,000,000.00	S2001F	<input checked="" type="checkbox"/>	Check Box 5			
			\$300,000,000.00	S3001F	<input checked="" type="checkbox"/>	Check Box 6			
			Residual	\$200,000,000.00					

payment sent									
MT 202	Chase	12345	-250000000	USD	July 17, 2004	S1001F			
MT 202	Chase	12345	-250000000	USD	July 17, 2004	S2001F			
MT 202	Chase	12345	-300000000	USD	July 17, 2004	S3001F			

match									
database									
Bank	bank account	debit/cred	Amount	CCY	Value Date	Ref ID	Split ref id	Urgency	Split Amount
Chase	12345	debit	\$1,000,000,000.00	USD	July 17, 2004	001F	S1001F S2001F S3001F	Y	\$250,000,000.00 \$250,000,000.00 \$300,000,000.00

Match Id									
MT900	Chase	12345	250000000	USD	July 17, 2004	S1001F	MS1001F		
MT900	Chase	12345	250000000	USD	July 17, 2004	S2001F	MS2001F		
MT900	Chase	12345	300000000	USD	July 17, 2004	S3001F	MS3001F		

assumptions made such as split ref id sent and received back from banks

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Note the residual 200mm should also generate a payment for release, this is not shown in the example for clarity.

3) Any items not applied or reversed on value date become reconciliation breaks to be investigated after value date.

#### **4.3.11.2. Basic Matching Engine**

The engine will take in confirmations received from external banks / sources and attempt to match these against requests already in the system. Items that are not matched will be placed into an unapplied queue and will be available for review during the day.

As part of the processing of confirmations, GCCM will store the step in the auto-match process which a match was found for a particular confirmation and the number of criteria an item matched on for the manual match process. This is required for MIS purposes and to produce the successful matches.

Note that each incoming notification should be segregated by the external account it is confirming activity for and the matching engine should only allow requests and notifications to be matched if both items are for activity through for the same real world nostro account.

For items that were netted, the matching has to be performed against the netted amount and for split items, partial matching needs to be accommodated.

##### **4.3.11.2.1. Auto-Matching Rules**

Incoming notifications should be passed through the auto-matching process to see if they can be matched to request already in the system; a confirmation of a payment (debit) has to be processed to match to the GCCM outgoing payments and any confirmation of credits would be matched to any pre-advice received by GCCM. In addition details of the notification should be stored with the item it was matched against.

There will be a limited number of matching sequences in which confirmations can be auto-matched against a GCCM record. If the confirmation is not auto-matched, it will then default to an unapplied queue for manual matching. Unmatched requests in the system should remain in the 'current' status, e.g. released, until matched.

If a debit or credit notification is received and no request has been sent by GCCM, then GCCM should put the items in an Unapplied queue for the account quoting remitters reference.

If a debit or credit notification is received and a request has been sent by GCCM, then they should be processed using the following matching steps. Fundamentally, payments should match with a confirmation of payment and receipts with a confirmation of receipt with amounts matching up.

As mentioned previously, as part of the external account static table, there will provisions for:

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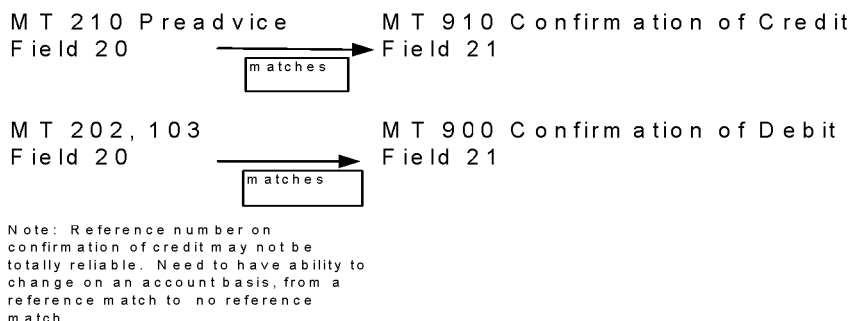
- Identifying whether the simple or complex process will be used to override the currency setup. It was mentioned that the accounting method will be identified at the currency level but an override would exist at an account level.
- Identifying the substring of characters to match on as required for Partial Matching and to provide the flexibility to change the strings of characters. This will be refined over time.
- Identifying whether to use reference matching or not. It is a known problem that banks may not provide the correct reference number so this would provide flexibility to change for example from Reference Match to a Partial Match.

We have an issue with the banks incorrectly matching items which may mean that we can't use reference matching for incoming funds. Therefore we will need a way to switch off options / reduce matching functionality by account and for payments and receipts independently without effecting whole principle of automated matching (e.g. tick box of rules to be used).

Once an item is matched, that specific item should not be available for matching again in case subsequent credits come in.

4.3.11.2.1.1. Match Sequence 1 - Reference Match

- Real world nostro account is same
- Check reference numbers supplied on notification against references quoted on outgoing messages. For SWIFT messages, the matching of reference numbers will be :



Field 21 is related reference so Field 21 should match with Field 20 of original request. Field 20s will not necessarily match with each other and Field 21s will not necessarily match with each other

- Check amount and currency
- If there is a match, then the update the status of the item in GCCM. Most payments should match under reference matching.
- If there is no match, then proceed to 2.

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#### 4.3.11.2.1.2. Match Sequence 2 – Partial Reference Match

- Real world nostro account is same
- Check limited / partial reference numbers supplied on notification (same as above) against references quoted on outgoing messages. (For TWS trades this could be last six alphanumeric characters of the transaction reference number.) Note GCCM D&R will need some way to generate the reference masking to extract the partial match by account. This will be refined as we progress.)
- Check amount and currency
- If there is a match, then the update the status of the item in GCCM.

If two or more ‘outstanding’ GCCM requests exist for a partial ref match for the same amount and it is impossible to match an incoming notification to one of them, then place the items in the unapplied queue.

#### 4.3.11.3. Unmatching items.

Users should have the ability to unmatch an item. If an item is unmatched any processed accounting should be reversed and the item placed in an unapplied queue.

#### 4.3.11.4. Unapplied Queue - Manual Matching

If no match is found automatically, then GCCM should let the user match up items manually. GCCM should allow the user to select an item in the unapplied queue and should propose matches based on the rules above (the matching sequences).

A screen with GCCM is needed to perform the manual matching.

Data to be shown on the screen relating to each of the notifications and payments/pre-advice:

Real World Nostro Account	
Name of Bank	
Amount	
Currency	
Customer Name	
Customer Account	
Unique Ref id	
Message Type	MT 103, MT 210 etc
BIC code	

Suggested options on the screen are as follows:

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To view potential matches ( sequence 4)	Clicks	To Perform Matches To Apply funds	Provide list of the Matching Sequences Available Provide space for user to input parameters to match : bs entity, exact amount, amount tolerance, name of bank, bank account number, BIC code
To view all unmatches			
To unmatch			
To apply funds			

Potential matches - all items with matching sequence of 4 should be displayed	User will highlight items	User to Click on Match button
		User to Click Unmatch button

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To View Unmatches		
Bank Credits	User will highlight items	User to Click on Match button
GCCM preadvices		
Bank Debits		
GCCM Payments		

If one item is selected, provide dropdown menu of the matching sequences or the parameters. Once entered, bring up all the others meeting criteria. For example, a bank credit select and parameter of bank account entered, then GCCM preadvices with same bank account should be displayed. User select the GCCM preadvices, then click Match

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To Unmatch		
Bank Credits	User to highlight items	User to click Unmatch button
GCCM preadvices		
Bank Debits		
GCCM Payments		

- If the user feels there is a match in the proposed list, they should be free to select the item and match it.
- If not the user should be able to widen the search parameters to bring up other potential matches. If the user then finds one or more items that match the outstanding entry, they should be free to select it / them and match.
- Once an item is in a matched status, it should then be processed as if auto-matched.

#### 4.3.11.4.1. Proposed Matching - Amount, Value, Currency and Remitter/Ordering Institution

When a user selects either a GCCM request record(s) or a confirmation(s) from the bank; GCCM should generate a list of potential matching items from the same real world nostro account.

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To do this GCCM D&R should compare the selected item with all the other records for the same account that are unmatched or unapplied at that point. For each of the items GCCM D&R should note the number of matching criteria it finds for the pair of items.

The list of proposed matches should then be generated by showing each item with at least three matching criteria in descending order of number of matches (i.e. from seven to three). Users should be able to easily expand list by decrease matching criteria cut-off from three to two, one or zero (in which case all items would be shown).

- For Payments / Confirmations of debits check the following details against the information contained in the unmatched or unapplied records (each match counts as one matched criteria):
  - Real world nostro
  - Confirmation of Debit / Payment as appropriate
  - Amount
  - Value
  - Currency
  - Originator of request (e.g. Lehman's sending BIC matches)
  - Beneficiary details if available
- For Receipts / Confirmations of Credit check the following details against the information contained in the unmatched or unapplied records (each match counts as one matched criteria):
  - Real world nostro
  - Amount
  - Confirmation of Credit / Receipt as appropriate
  - Value
  - Currency
  - Originator of Payment (e.g. GS or Citibank)
  - Beneficiary details if available

Note the check may need to be against interbank settled amount (i.e. prior to charges) and for incoming credits the originator quoted should be checked against either ordering customer or bank. (We are dependent on information supplied to ourselves.) Where charges have been debited GCCM D&R should allow automatic journaling of the charge as a fee expense.

#### **4.3.11.5. Matching Status and Accounting**

Outgoing activity that has been released to agent banks should be tracked and compared with incoming notifications. When a notification has been 'matched' against a GCCM request, the status of the request in GCCM should be updated.

The status of the request in GCCM should update as settled for the matched notification. A status update should then be sent to the Originating Source system of the request with the appropriate status.

If the notification indicates that the item has settled, then GCCM should process the accounting associated with the funding and settlement of the request.

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GCCM	User Action	Validation	Pass/Fail	System Action	Internal System Status	Published Status Comment
Matching *see below for preadvices				<i>Every item will be unmatched</i>	Unmatched	
		Auto Match	Pass	Process Accounting, associated funding and settlement or request. Send status message back to originator	Automatched	Settled
			Fail	Send to Unapplied Queue		Unmatched
	Manual Match		Pass	Process Accounting, associated funding and settlement or request. Send status message back to originator	Manual match	Settled
			Fail	Send to Unapplied Queue		Unmatched
	If previously matched, and then unmatched			Reverse any accounting and place in pending queue.		Unmatched
Manual create of records for unapplied items	Applied/Unapplied Funds user selects items to create GCCM records  User then input required info		Pass	Process accounting for the control account, suspense. Send 'Settled message back to originator'	Manual created entries	Settled



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#### **4.3.12. Unapplied Items – Ref 1.4.2**

If a notification has been received of items that have not been requested or preadvised (fee charges or unpreadvised funds), a user should be able to select the items and create entries to apply the funds in GCCM. This would be similar to the current FPS process for users and R&D to claim unapplied funds

As part of the entry creation process the user should be asked for the internal Business or Control Account that an item should be passed to and the value date (default today). This internal account number should be validated and then a record created in the real world nostro and the internal account to represent the entry. Note the internal account chosen by the user will vary depending on the item and could be an Internal Business account for an unapplied credit or a fee / interest account for a unapplied debit for example.

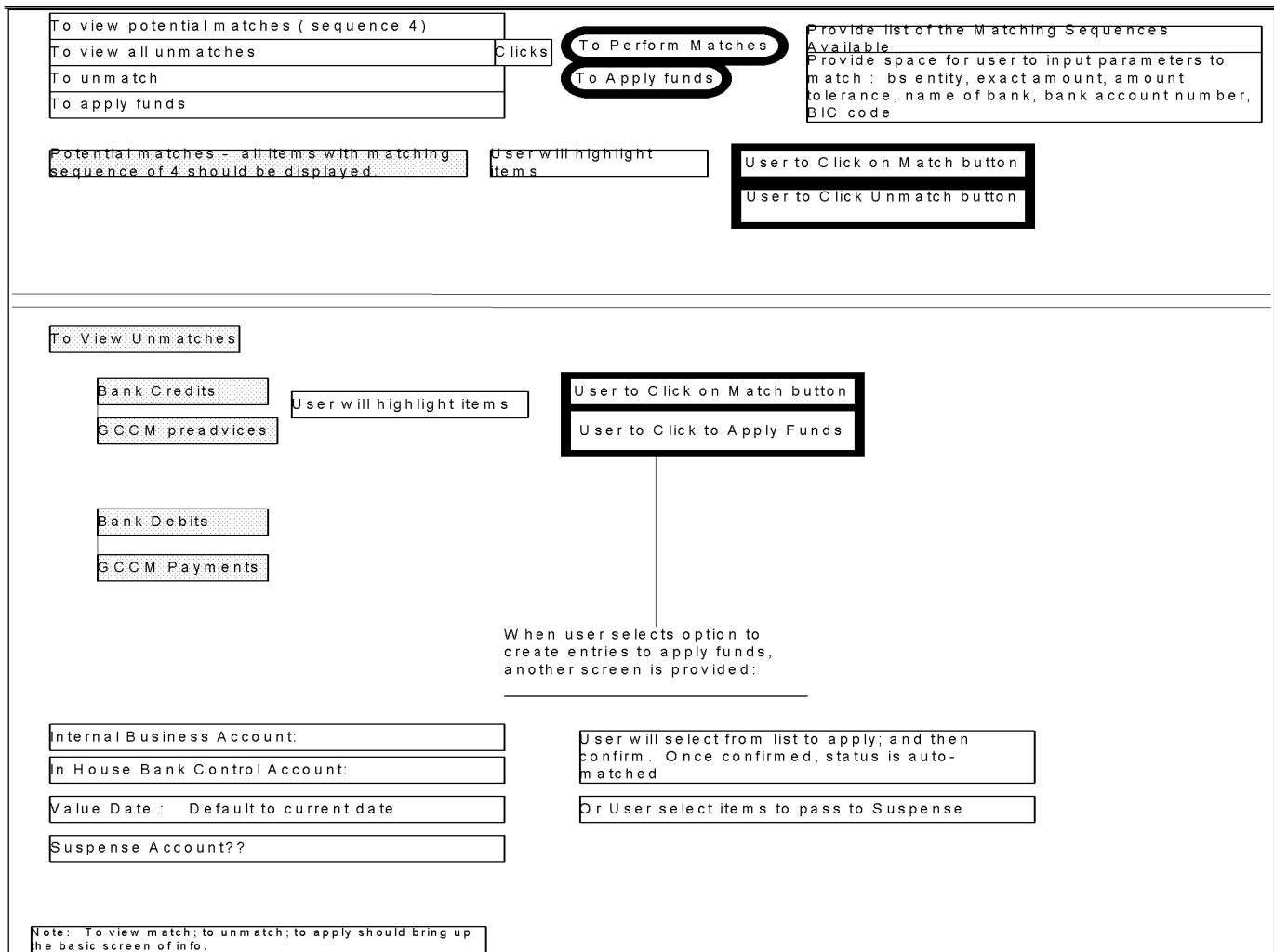
The status of the item should reflect as matched and it should then be processed as if auto-matched (as shown above in the “Manual Create of records for Unapplied items” row).

The user should be free to select individual or a list of items to apply. For multiple records the user should be presented with the option of applying all the selected records with the same value date and to the same internal account or to confirm the internal account number and value date for each record. (The ability to amend value date from the current funding day should be limited to CCM and regardless of users be no earlier than the date of the unapplied item.)

It is understood that the regions currently manage the investigation of unapplied items differently and so the control process for the investigation of items will be driven by the users. To permit this GCCM should allow the auto posting of items to suspense where this function has been selected.

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#### 4.3.12.1. Suspense

As above, the user should be free to select individual or a list of unapplied confirmations of debit / credit items to apply, including having the ability to apply the posting to a suspense account for further investigation. The suspense account should default to the main suspense account defined for the entity that owns the real world nostro account, though where more than one suspense account exists for the entity that owns the real world nostro account users should be able to override the default suspense account to one of the others owned by the entity from a list presented to them by the system.

If items are applied to suspense at this point, then the GCCM functionality to make an internal payment should be used to pass entries between suspense and the correct internal Business or Control Account.

##### 4.3.12.1.1. Unapplied – New York

As noted above, the regions investigate unapplied items differently and in New York items are generally moved from the nostro to a suspense account after a set period of time. Items are then investigated or returned to the originator if required.

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GCCM D&R should not disrupt this process and so allow users to apply items to suspense either via an originating system (simply processing the request as required) or via the process described above.

#### 4.3.12.1.2. Example of Unapplied Credit – Applied to Suspense and then Investigated

1. Initially a bank credit of USD 10mm came in, say, to Chase
2. End of day, sent to suspense

Debit LBI Nostro Account	10,000,000
Credit LBI Nostro Suspense	-10,000,000

3. After research, able to identify owner and apply:

Debit LBI Nostro Suspense	10,000,000
Credit LBI Fixed Income Nostro Control Account	-10,000,000

4. If after research & a set number of days, can't apply item, then return:

Debit LBI Nostro Suspense	10,000,000
Credit LBI Real World Nostro Account	-10,000,000

#### 4.3.12.1.3. Unapplied Bank Credits – London

In London, any unapplied bank credits will remain in the nostro account and it will not be moved to a ledger or control account. GSSR will be performing a daily reconciliation between bank account statements vs. GCCM. It is envisioned that a feed from GSSR will be brought into GCCM so that the accounting entries for items left in the unapplied bank credits would be accounted for on a backdated basis.

#### 4.3.12.2. Auto Post of Unapplied Items

A number of suggestions have been made to automate the process of applying funds from an external nostro to various Internal Business Accounts. This section details these suggestions and how they could work in practice.

It is expected that GCCM would attempt to identify a likely home for unapplied funds and will then pass sufficient details from the incoming confirmation to the identified system (as FPS does for ADP) to allow the system in turn to apply the funds to a customer or ledger account.

In particular a limited number of the Firm's systems (ADP potentially) are understood to have a process that applies funds to internal ledger accounts after reading the information contained in the notification from the bank. It would be useful to understand this further as the auto-application of items based on

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trawling the incoming notifications for information and then using this to apply funds to internal account could be extremely useful.

4.3.12.2.1. Always Apply Funds to a Particular Internal Business Account for a specific External Account

In the case of ADP, currently FPS doesn't perform any matching. All incoming advices are sent back to ADP where the matching is performed. ADP matches on account number and validates the details of the payment against the master account file for account name and address.

Similarly GCCM D&R should allow users to link up an external account with a particular GCCM account, say an Internal Business Account, for the posting of all unapplied funds to on an automated basis.

So as an item arrives, it is first reviewed against any existing preadvice notifications for the external nostro account and if a match is not found, then the system should place the item in an unapplied queue for the external nostro account. This unapplied queue is then automatically cleared by creating a 'matched' GCCM record using the process for manual creating records described above, with the account to be credited as the linked account that has been defined in advance.

In turn GCCM D&R should publish details of all items thus 'matched' back to the source system(s) that are identified as having posted to the particular GCCM Business account.

4.3.12.2.2. Always Apply Funds to an Internal Business Account for specific Formatting / References

GCCM D&R should allow users to create rules for the automatic application of funds in external accounts to a particular GCCM account, say an Internal Business Account, based on some user defined criteria.

The criteria should be based the information contained in the fields normally available on a confirmation message sent via the banks (e.g. a MT910) and should include the ability to specify such things as common references amongst other text. The system must also allow combinations of criteria to be specified.

So as an item arrives, it is first reviewed against any existing preadvice notifications for the external nostro account and if a match is not found, then the system should place the item in an unapplied queue for the external nostro account. This unapplied queue is then automatically reviewed against the predefined criteria set.

If a criteria set is found to tally with the information supplied in the confirmation, then the unapplied queue should be cleared by creating a 'matched' GCCM record using the process for manual creating records described above, with the business account to be credited linked to the criteria set in advance.

In turn GCCM D&R should publish details of all items thus 'matched' back to the source system(s) that are identified as having posted to the particular GCCM business account.

4.3.12.2.3. Always Apply Funds to an Internal Business Account dependent on look-up to GARM

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GCCM D&R should automate the application of funds in external accounts to a particular GCCM internal account, say an Internal Business Account, based on Customer Account Numbers supplied with the confirmation of credit.

CM user should be able to define strings that could be a Lehman customer account on a Firm settlement system, i.e. a template for the account numbering on the settlement system. This could be considered a special case of the general criteria look-up outlined above.

For example \*765????\* could indicate a LBI RISC client account number and so the default assumption would be to post the items through to an internal account for investigation by a RISC user but the number of false positives can be reduced by looking up in GARM to confirm the client account number exists and is in fact on a LBI RISC client account.

When an item arrives, it is first reviewed against any existing preadvice notifications for the external nostro account and if a match is not found, then the system should place the item in an unapplied queue for the external nostro account. This unapplied queue is then automatically reviewed against the predefined criteria set, and thence against the specific customer account form templates.

If the system is able to tally what appears to be a client account number with the predefined strings to look for, it should send this potentially client account number to GARM to see if GARM can find a similar record in its database.

If it does then this should be communicated back to the GCCM including information on the client account owner's name and other basic details. In turn these details should be compared with the data supplied with the confirmation to see if the account owner name agrees. If it does then the unapplied queue should be cleared by creating a 'matched' GCCM record using the process for manual creating records described above, with the business account to be credited linked to the criteria set in advance.

If the system is not able to match the client account names, then item should remain in an unapplied status but with details of the GARM match kept with the D&R unapplied record so a user can review the data to see if the match was correct but for example a shortened version of a name had been used.

If GARM does not return a match, the item should remain in the unapplied queue for the external nostro.

In turn GCCM D&R should publish details of all items thus 'matched' back to the source system(s) that are identified as having posted to the particular GCCM business account.

#### 4.3.12.2.4. Issues of Missing Customer Account Numbers on Incoming Credits

Currently matching incoming credit confirmations to pre-advice and / or automating the application of funds based on client account details is made more difficult as the incoming credit confirmations do not always quote the customers' account numbers.

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To further aggravate the situation, even if customer account details have been submitted to the agent bank for book transfers, i.e. where the customer banks with the same bank as Lehman, confirmations of credits have been advised to ourselves with no client account number. This is especially true in the case of MTS.

Therefore CCM have been in discussion with the nostro banks about potential solution based around the specific formatting of payments into client accounts that may resolve / reduce the prevalence of the issue.

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## 5. Accounting Engine and In-House Bank Sub-Ledger – Ref 1.5

The following chapter details the key features of the D&R sub-ledger that will be used to record the activity of the in-house bank.

GCCM D&R will internalize cash flows through intercompany transactions supported by an in-house bank concept that should enable CCM to minimize the number of real-world bank accounts the Firm owns by replacing external nostro accounts with internal business accounts. It is envisaged that the in-house bank will perform the clearing services for all Firm disbursement and receipts and automate the funding of the activity as a by-product of handling the instruction.

The in-house bank will keep an arm's length relationship with other Firm entities and keep a clean audit trail of all requests it receives and maintain accounting entries for each participating subsidiary in its books. It will be possible to settle intra group requirements via book entries across inter-company accounts instead of cash entries through real-world bank accounts

It is not expected that the in-house bank will be a single entity or a registered bank though CCM are looking to leverage the Firm's bank licenses wherever possible. For example LBHI UK Branch funds LBIE and in turn LBHI funds LBHI UK Branch, thus both LBHI and LBHI UK Branch would be considered funding entities for the Firm and form part of the in-house bank on GCCM D&R. It is expected that LBI will act as an in-house bank to itself.

The in-house bank will be set-up so that the Firm's current and future businesses and applications would communicate with D&R as if communicating with a real-world bank. The in-house bank will host 'customer' accounts (where customer refers to Treasury support view of the internal business lines), to be referred to as Internal Business accounts that will represent a business 'nostro' or cash account with the in-house bank. Businesses will be able to request payments from their business account either to another part of the Firm or to a third party.

All accounts will be available on-line for the users to review in real-time and via GSSR at the end of day for business owners to reconcile activity through their business accounts against their own trade or customer bookings.

### Key Features:

- For businesses with external accounts and existing systems the implementation should be as simply as a change in nostro agent bank and so the impact should be limited. External accounts will be hosted with GCCM alongside internal business accounts and external nostro accounts should be migrated to internal business accounts over time without impacting the payment flow.
- The total of the accounts within each non Treasury entity on GCCM should reflect intercompany balance with a Treasury entity. At DBS once both GCCM and the trading systems have passed the journals the sub-ledger balances should net to zero except for true real world account balances.

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- Businesses will be able to have as many internal business accounts within the in-house bank as they choose. Treasure will not impose any constraints on these. GCCM D&R will report the activity through each internal business account:

The in-house bank will also host the external cash accounts of the firm and will be used to track activity through the external accounts and fund them. The various views of the funding requirements and account activity are discussed in the previous chapter.

The in-house bank will apply interest to intercompany and internal business accounts at the Treasury Index rate to recover the cost of funding the various cash flows for individual businesses and entities. In addition D&R will allow the allocation of fees back to the business units based on activity as opposed to the generic allocation that exists today.

## **5.1. Sub-ledger Infrastructure**

### **5.1.1. In-House Bank Architecture**

As a sub-ledger the D&R in-house bank will consist of a representation of the Firm's entities that have rules defining how they interact with each other. Within D&R, each entity will in turn:

- Consist of a series of accounts, for example
  - Nostros
  - Intercompany Interest and Principal accounts
  - Control accounts / dummy nostros
  - Suspense
  - Other including Plug accounts
- With each account will be linked to a series of properties, for example:
  - A DBS account
  - BPM code
  - Available currencies (if accounts are set-up as multi-currency only)
  - Produce statement for GSSR
- That is governed by a rule set
  - Rule set for entity will note how to settle a payment / receipt if a message comes through for it.
    - For example: LCPI movements in USD settled through NY In House Bank, European currencies through London In House Bank and Asian currencies through Tokyo In House Bank
  - Rule set for accounts will note how it behaves if a 'posting' comes through to it.
    - For example: Intercompany principle and interest lines in each entity must balance with equivalent account in linked entity and offsetting entry to posting must occur within each entity in pair.



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### 5.1.2. Legal Entity

GCCM D&R will be a sub-ledger that will post accounting entries to DBS on a daily basis. The sub-ledger will consist of a series of accounts that will be used to track the cash activity (internal and external) for the Firm. Each account set-up for a business within GCCM must reside in one of the Firm's entities. Each entity will in turn be linked with a Treasury entity that can fund movements through the entity. Activity between the entities will be recorded via a pair of intercompany accounts. Note entities will not have to be linked to the Treasury entity in the same jurisdiction as they domiciled and may change their funding relationship over time.

Journals will be posted between accounts to represent the movement of funds between the ledgers / accounts.

This section defines how a legal entity should be set-up and identified, its funding relationship, its external account structure if relevant and related information.

#### 5.1.2.1. Required Information:

##### 5.1.2.1.1. Legal Entity Table

This table will define basic details for the entity.

Field	Character	Comments
Legal Entity	Text	Name
DBS Legal Entity Number	Text	DBS Number
Legal Entity Number	Number	GCCM id
Legal Entity Address	Text	Postal Address
Legal Entity Owner	Text	Business / Ops owner
Functional Currency	3 letter code	Is this required?
BPM	Number	LB Management code for Owner
Business Line	Defined list	FID / Eq, etc
Business Line sub-division	Defined list	Within overall
Signing / Approval Process	Defined list	Mandate link to Signatories database Number of approvals required
Domicile Location	Text	Note this data can be supplied by NWM db if linked
SPV Flag	Y/N	
Treasury Funding Entity Flag	Y/N	
Specific notes	Note	General comments field for now; including code words? for common set-up concerns

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#### 5.1.2.1.2. Table Linking Entities

This table identifies an entities funding and paying entity, where relevant, for a particular currency.

Field	Character	Comments
Legal Entity Number	Number	Name
Paying Agent Legal Entity Number	Number	GCCM record id identifying entity that makes payments on behalf of entity for noted currency
Treasury Funding Entity Number	Number	GCCM record id identifying entity that funds the legal entity
CCY	Code	Allow option for all non specified currencies

#### 5.1.2.1.3. Default Accounts numbers

In addition for each entity a series of default accounts should be set-up to be used when a user does not complete all the optional details on a request or the system is unsure which account to use.

Field	Character	Comments
Legal Entity Number	Number	Name
D&R Account Number	Number	GCCM record id identifying account
CCY		
Function	List	Function the defined account is to be sued for from list of:  Internal Nostro, External Nostro, Seg, Back-up, Reserve 1, Low-Value, ACH, Funding Nostro, Suspense, Plug, Fees, etc.

For each entity an Internal Business Account, a Suspense and Plug account should be required.

#### 5.1.2.1.4. Entity Sub-Ledger mapping table

To allow users to translate entity numbers between different systems.

Field	Character	Comments
DBS Legal Entity Number	Text	Name
Sub-ledger	Text	From list of current originating systems
Sub-ledger Legal Entity Number	Text / Number	

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5.1.2.1.5. Authorised Currencies for Entity

It is assumed that not every currency set-up in GCCM D&R will be required for every entity as it is added into D&R. In fact some entities may only ever operate in one or two currencies. Therefore as part of the set-up for the entity, the entity should be assigned currencies rather than defaulting to all.

Field	Character	Comments
DBS Legal Entity Number	Text	Name
Currencies	Text	Select from drop down list

It should be possible to assign further currencies to an entity at any time.

The adding or assign of a currency should then drive the creation of accounts such as at least one internal nostro, one FX account, intercompany with funding entity for currency, P&L interest and charge accounts, plug and suspense in currency and finally conversion in currency.

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### 5.1.3. Business Line

Business lines cut across legal entities and will be the owners of the individual Business accounts that reside in GCCM. It is usefully to include this detail to allow businesses to extract all their accounts easily so they can understand their cash position / obligation to Treasury at any point in time. It will also aid reporting of volume statistics by business.

Each account will be assigned to a BPM code that will generally indicate the business that owns the account so the following tables will simply confirm the details for the users on GCCM. Also it may be worth considering extensions to the BPM code to ensure that CM have the level of detail they require for reporting purposes.

#### 5.1.3.1. Required Information:

##### 5.1.3.1.1. Basic Business Line Information

Field	Character	Comments
Business		
GCCM unique identifier		
BPM		LB Management code for Owner
Business level	Interger	For example Fixed Income / Equities would be highest roll-up as per BPM And so on down
Location		
Extended BPM		Allow sub-divisions of business for example by location – GCCM specific  Multiple Extended BPMs may role up to one BPM
Overall business Owner		
Payment fee recovery allowed	Y / N	Is recovery of payment charges from individual Business accounts owned by business line allowed?
Intercompany Interest recovery allowed	Y / N	Is recovery of intercompany interest expense from / posting of intercompany interest earnings to individual Business accounts owned by business line allowed?

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#### 5.1.4. Accounts

This section defines how an account should be set-up, identified, its external account if relevant and related information.

Accounts should be created via a user interface either through an existing request process such as the set-up of new ledgers in ITS and DBS or through a new procedure. In either case all account set-up should be under dual control and require at least an input and approval stage.

Accounts will be grouped for easy of investigation and balance or position reporting. These groupings will be definable using the static data included in the set-up of each account and the system should allow the groups to be set-up of by owner user, BPM, legal entity, currency, location, account type or some combination of these characteristics.

##### 5.1.4.1. Required Information:

###### 5.1.4.1.1. Basic Account Information

Field	Character	Comments
Account Number	Numeric / Character	Unique Ref May be non-sequential as ranges may be saved for particular purposes Format to reflect structure / purpose
Account Owner	Text	Business / Ops owner
Account Type	Defined list	Will define accounting / interaction rule sets Options <ul style="list-style-type: none"> <li>• Real World Nostro</li> <li>• Real World Cash / Depot</li> <li>• Intercompany</li> <li>• Internal Business Account</li> <li>• Fees</li> <li>• Interest</li> <li>• Suspense</li> <li>• Plug</li> <li>• Conversion</li> <li>• PPS Margin Accounts</li> <li>• Margin Accounts (?)</li> </ul>
Account Name	Text	
Currency	3 letter code	
Legal Entity	Text	Name
DBS Legal Entity Number	Number	DBS Number
DBS Account Number	Number	Account journals to be posted to
Sub-ledger	Text	System containing offset postings if applicable

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Sub-ledger Legal Entity Number	Text / Number	Sub-ledger entity number
Sub-ledger Account Number	Text / Number	Sub-ledger offset postings
Extended BPM	Number	GCCM code for Owner
Business Line	Defined list	FID / Eq, etc
Business Line sub-division	Defined list	Within overall
Signing / Approval Process	Defined list	Does account require 2 or 3 stage approval process? Are any limits involved such as LBI It is likely that this will only be used for the manually input items. Automatically fed items are assumed to have gone through the appropriate approval process within the originating system.
External Account Number	Text / Number	Note this data can be supplied by NWM db if linked
Segregated Flag	Y/N	Client money
Internal Group Account Belongs to	Name	

Note included in the list of account types are two types of Margin account. This is to reflect the differing margin process that exists.

#### 5.1.4.1.2. Linked Accounts

During the implementation of the system it is expected that as GCCM D&R intermediates between existing settlement systems and the nostro banks a one to one mapping will exist between the Internal Business Account and the external nostro account.

Specifically an existing nostro account used for example by source system A for entity B would remain open and available to the existing user day one until internalised at some future date.

However rather than having GCCM D&R simple act as a black box through which traffic for a nostro account passes through untouched, CCM would still want to have the requests validated and included in funding numbers.

Therefore the intention is to set-up two accounts representing the external account within the same entity on GCCM:

- An external nostro account that is linked to the payment channel
- An Internal Business account that is linked to the users and their source system

Users would release messages from their system quoting the new Internal Business account (or an account number that can be translated by GCCM to the new Internal Business account). GCCM would 'know' that this business account is linked to a specific external account and so would process the requests through this external account.

For the users it would appear as if their instructions are being processed as per their current set-up. At future point in time the requirement for the external nostro account would be reviewed and potentially closed. When this happens the link between the two accounts would become invalid but the source system

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would not need to be reconfigured to use an Internal Business account as this would have already happened.

Therefore a process / table is required to allow the linkage of Internal Business accounts and external nostro accounts. A suggested format for the table is

Field	Character	Comments
Account Number	Numeric / Character	Internal Account
Account Group	Character	To allow more than one internal account to be linked to an external account
Account Number	Numeric / Character	External Account

Correspondingly if confirmations of credit / debit come in for an external account that has been linked to an Internal Business Account, GCCM can use the table to identify where to apply any unapplied items automatically.

#### 5.1.4.2. Additional Information for External Nostros

Field	Character	Comments
Account Number	Numeric / Character	Unique Ref
External Account Number	Text / Number	Note this data can be supplied by NWM db if linked
Agent	Text	Agent Bank info for nostros Note this data can be supplied by NWM db if linked
Account Location	Text	Note this data can be supplied by NWM db if linked
External Account Number	Text / Number	Note this data can be supplied by NWM db if linked
GARM ref for SSIs	As GARM	
Complex Matching		Use this process for matching rather than default of Simple Matching
Additional Info	Text	
Additional Accounting Rules	Text	On top of basic defined for account type
Segregated Flag	Y/N	Client money
SPV Flag	Y/N	
Operating Cash Flag	Y/N	
Override day count for message generation	Number	Override currency default for value days prior to message value that external requests are generated
End of day target balance	Number	Balance to be targeted for end of day funding – default zero but will vary within regions
End of balance long balance threshold	Number	Balance threshold for end of day funding below which balance will be left – default zero (may not be zero as it may not be cost effective to say clear a balance of less than ten dollars long)
End of day short balance	Number	Balance threshold for end of day funding below which

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threshold		balance will be left – default zero (may not be zero as it may not be cost effective to say clear a balance of less than ten dollars short)
External Group Account Belongs to	Name	
Special CM feature	Defined list	E.g. Pooling / Sweep in place that could effect accounting and processes
Reporting Requirements		
Intraday Credit Limit		
Exclude account	Y/N (Default N)	Exclude from net currency balance reporting and auto fund / sweep processes.
Send MT210s or equiv	Y/N (Default Y)	Whether or not MT210 messages or equivalents should be sent externally
Swift Zengi Ref		May be included as part of SSI data if more relevant there

Linked to External Nostro accounts will be further static including

- SSIs
  - Including alternative external account numbers (i.e. other forms in which account number can be presented)
- Available payment channels

#### 5.1.4.2.1. Required Information for External Nostro Account SSI Data

The following table outlines the basic information that will need to be maintained on Lehman owned nostro accounts that will be maintained on GCCM D&R to allow payment and receipt messages to be generated to Fund the external accounts and release instruction requests correctly identifying accounts at the Firm's agent banks, etc.

Field	Character	Comments
Account Number	Numeric / Character	
Currency		
Pay / Receive / Dual		To allow for separate formatting for payment and receipt in case required
Intermediary Bank		
Intmd Additional Field 2		
Intmd Additional Field 3		
Intmd Additional Field 4		
Intermediary Code		
Intermediary Code Type		
Account with Bank		
AwB Additional Field 2		
AwB Additional Field 3		
AwB Additional Field 4		



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Account with Bank Code		
AwB Code Type		
Account with Bank Account		
Beneficiary Name		
Beni Additional Field 2		
Beni Additional Field 3		
Beni Additional Field 4		
Beneficiary Code		
Beneficiary Code Type		
Beneficiary Account		
Default Payment Type		E.G. MT103 or MT202
Generate Message		Assume Yes but allow No, in which case no messages are generated from GCCM D&R
Default Charge Option	OUR / SHS / BEN	As per Swift whether bank charges are split, taken by LB or beneficiary.  It is expected that individual messages will have override to this but this default should be picked up if not stated on individual request.

#### 5.1.4.2.2. Alternative External Account Numbering

Field	Character	Comments
Account Number	Numeric / Character	
External Account Number		Alternatives
Comment		Detail of where alternative used; E.g. seen on MT950

#### 5.1.4.2.3. Account Specific Cut-offs

The external payment and internal book to book cut-offs applied to the account by the agent.

Field	Character	Comments
Account Number	Numeric / Character	
Agent's External Payment Cut-off		Latest time a payment that will be external to agent can normally be released to the agent - CCM users can override and force payments out.
Agent's Internal Payment Cut-off		Latest time a payment that will be internal to agent can normally be released to the agent - CCM users can override and force payments out.

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#### 5.1.4.3. Additional Information for Intercompany Accounts

Field that defines extra information required for pairs of intercompany accounts.

Field	Character	Comments
Account Number	Numeric / Character	Unique Ref for Intercompany
Index for Interest		Index for calculating the interest on account
Account number of other account in pair		Account linked to account.
Withholding tax rate		If applicable for credit positions
Interest period		Default would be daily

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**5.1.4.4. Further background on the various account types and how they interact with each other**

5.1.4.4.1. Real World Nostro

Can be used to make payments and receive cash.

External account would be included in the reporting screens and the Funding process by default, though it should be possible to exclude individual accounts from the automated Funding process.

Internal movements to external account should be allowed though certain intra Lehman movements may paid real world. (Basic rule would be transfers to another business or external account in the same entity should be internal whereas transfers to an account in another entity would be external, particularly if either entity is regulated.)

5.1.4.4.2. Real World Cash / Depot

Primarily used for the settlement of securities trades and cash will be debited and credited automatically as a result of the securities trades.

External accounts so defined will be funded from central nostro accounts and should be included in Funding process by default.

Can be used to make payments and receive cash though expectation would be that this is very unlikely as cost will exceed Real World Nostro payment costs.

The particular sub-type of depot accounts would be Tri-party accounts, which may have different funding requirements.

5.1.4.4.3. Internal Business Account

Account used by the business to make payments from and receive credits to – their account with the in-house bank. The business account could be linked to real world account. (Internal and External entries should look similar at this level.)

Should post to a control / conversion line at DBS to which settlement systems post offset. At DBS business accounts should go flat if there are no breaks.

5.1.4.4.4. Intercompany

Intercompany accounts link a pair of entities and so exist in pairs: one in each entity representing the payable to / receivable from the other.

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Each non-Treasury entity will be linked to a single Treasury entity via a pair of intercompany accounts (one per entity) per currency. Treasury entities will have limited number of interconnections between themselves via a pair of intercompany accounts (one per entity) per currency.

Pairs of intercompany accounts should always been in line.

Multiple Internal Business Accounts will link to an intercompany. In effect the intercompany account represents the entity's position with the in-house bank and the Internal Business Accounts the sub accounts of the entity.

All activity involving movements between entities should flow across at least one set of intercompany accounts.

5.1.4.4.5. Fees

Expense account to which fees are posted – external cost passed on by agents and recovery of fees from business lines.

Should post to P&L accounts at DBS

5.1.4.4.6. Interest

Expense account to which interest is posted – external costs passed on by agents and recovery of funding / interest from business lines.

Should post to P&L accounts at DBS

Credit and Debit interest accounts should be separated at the sub-ledger level.

5.1.4.4.7. Suspense

Suspense accounts exist to allow items to be applied to a ledger so that they can be included in the cash / funding position but would not be the true destination account that funds should be applied to. In fact items should be moved from a suspense account to either another GCCM account or be returned to remitter within 30 days.

Reporting of the balance and unreconciled items in the suspense account should be done daily.

5.1.4.4.8. Plug accounts

Exist as default account that should be used when unable to determine second account in a journal.

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For example a debit/credit to an intercompany account must be offset with credit/debit to another account. This other account would have to be the Plug account for the entity if the actual second account did not exist, was an invalid choice or could not be determined.

Reporting of the balance and un-reconciled items in the plug account should be done daily.

#### 5.1.4.4.9. Conversion

Essentially an Internal Business Account used exclusively with Finance to move items through to DBS without having to set up full infrastructure at sub-ledger level.

#### 5.1.4.4.10. PPS Margin Account

External account used to by certain exchanges to cover changes in margin requirements. Exchanges have right to automatically debit / credit PPS accounts to cover / return short /long margin positions.

Accounts should be included in the automated Funding process but would not be used to make other payments.

- PPS Margin accounts are auto debit / credit accounts that can be zeroed daily as any other real world nostro and can be treated as such by GCCM though they should only be used for FUND entries not support free cash movements.

#### 5.1.4.4.11. Margin Account

External account used to represent margin requirement with exchanges – positions will always be long cash but that cash cannot be returned to holding company unless margin requirement is reduced.

As a result should be excluded from Funding process and also may be necessary to exclude from the cash balance reporting numbers or at least show as separate Operating Cash number that is not available for general use.

- The cash in these external accounts are not available to the rest of the Firm until the margin requirement reduces. Therefore these balances should not appear in the Currency Positions numbers to be used for funding or including in automated Funding process.

#### 5.1.4.4.12. FX Conversion accounts

These accounts will be used to manage the conversion of requests in currency A into currency B. They would generally be generic within an entity, so that cross currency bookings can be more easily facilitated without having to say convert EUR into USD to convert to GBP:

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E.g. LBHI's USD FX Conversion account and LBHI's GBP FX Conversion account rather than LBHI's USD GBP FX Conversion account (USD) and LBHI's USD GBP FX Conversion account (GBP)

Though it should be noted that pairs of specific currency conversion accounts may be set-up to handle specific conversions that will see higher volume of bookings, for example Euro In-currency conversions.

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### 5.1.5. Currencies

The following section outlines the minimum information that should be retained on a particular currency. The system should be flexible enough to add currencies in the future.

#### 5.1.5.1. Required Information

Field	Character	Comments
Currency	3 letter code	
Currency Name	Name	Full title
Day Count		
Working Week		Whether currency follows Western working week or includes Sunday but not Friday's
Holiday Calendar ShortCode		Default
Override day count for message generation	Number	Override currency default for value days prior to message value that external requests are generated
Default Interest Index		
Number of days forward to generate external messages		
Rounding		Number of decimal points messages can be quoted to.  Default 2 but JPY would be zero
Home Country		
Default accounting generator process		Simple or Complex – i.e. simple all items accounted for, complex only confirmed items accounted for on value date
Send MT210s or equiv	Y/N (Default Y)	Whether or not MT210 messages or equivalents should be sent externally

#### 5.1.5.2. Business Day

This table will define a normal business day for the currency and indicate difference from GMT of major market (i.e. New York for USD, Frankfurt for EUR).

Field	Character	Comments
Currency	3 letter code	
Opening Time External movements	Day : Hour	First point at which activity is likely to settle (requests can in fact be sent externally earlier). Internal activity can settle as soon as business day of system changes for currency.
Closing Time External movements	Day : Hour	Time at which system should close currency for external flows with current date
Closing Time Internal movements	Day : Hour	Time at which system should close currency for internal flows with current date.

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Hours different from GMT	+/- Hour	
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The internal cut-off will be after the external cut-off and will be the approximate point when postings to DBS are generated for the particular currency. After the DBS postings have been generated and sent, it is expected that the value date for the currency will roll forward.

Any requests received after this internal cut-off for the current system date should be treated as a back valued request.

### 5.1.5.3. Calendars and Working Weeks

The system should discount weekends and global holidays but if at least one currency is available on a day then that day should be counted as a working day for the system and so contribute to the days maintained on the system.

In particular the system will need to cope with working weeks that run from Sunday to Thursday inclusive as part of its initial implementation and so the system should be open for Sunday in addition to Monday to Friday.

- The firm already has external accounts open Sunday to Thursday but these are controlled Monday to Friday; for example Israel Shekials and is the process of opening accounts (or reviewing business requirements) for Saudi Riyal, Egyptian Pound and Iraqi Dinar accounts.

If DBS is not available to accept postings for a Sunday, GCCM D&R should post any activity including intercompany interest on the following working day for DBS (this would generally be the Monday in this scenario).

For calendars GCCM D&R should take in the default calendar for all currencies supported and ensure the system is available to accept and process activity on all valid business days for a currency.

- For example 25 December is a valid value date for JPY (assuming it does not fall on weekend) and so the system should be open.

However GCCM D&R should also take in alternative calendars to allow users to override the non-working day validation of value dates for days when the default calendar indicates that the currency should be closed but is in fact open.

- For example in AUD state holidays appear in calendars driven (referred to) by cities' business days that are not actually country holidays and so general cash and securities settlement can occur

If DBS is not available to accept postings for the given value date, GCCM D&R should post any activity including intercompany interest on the following working day for DBS.



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5.1.5.3.1. Calendar Required Information

Field	Character	Comments
Currency	3 letter code	
Holiday Calendar Name		
Holiday Calendar ShortCode		
Holidays	Date	

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### 5.1.6. Interest Indices

Similar to calendars and currencies, GCCM will need to maintain basic information and receive daily updates on the rates of certain standard interest indices. At the moment the source of this information is open.

Users should be able to define indices based on other indices. These manufactured or manually updated indices are likely to be attached to certain intercompany accounts / fee calculations where as most accounts will default to the Firm's Index rate.

#### 5.1.6.1. Required Information

##### 5.1.6.1.1. Background

Field	Character	Comments
Interest Index		
Comment		
Location definer		
Currency		
Autoload, Manufactured or Manual Update		
Source		If autoload
Reset frequency		Generally daily
Calendar		Would override currency calendar?
Accuracy		Number of decimal points rate quoted to
Interest basis		Would override currency calendar?
Underlying Index		For manufactured indices
Spread		For manufactured indices

##### 5.1.6.1.2. Rate information

Field	Character	Comments
Index		
Date		
Rate		
Roll forward flag		

Note where a rate update has not been received, it is better that the system rolls forward the prior working day's rate than have no rate in the field though users should have the ability to go in and amend rates for individual days.

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## **5.2. Accounting Per Request – Ref 1.5.1**

Accounting will be generated within the in-house bank once a request has passed through the payment engine outlined in Chapter 4. A flow chart and table showing the various stages that a request goes through as it is processed is available in Appendix 10.1.3.

### **5.2.1. Process Name: Validation for Accounting – Ref 1.5.1.1**

To ensure activity is correctly advised with sufficient data to create the correct journals to minimise the number of invalid accounting entries being generated, the requests should pass a validation process prior to creating the journals.

These checks are to be run in conjunction with the validation process undertaken elsewhere in the system but will flag specific items to prevent the failure of accounting entries to post to DBS.

Once items have been through validation process they should be passed to next stage at which GCCM should determine required accounting entries

Entries passed to the accounting engine should be checked for the following:

- Quoted accounts are both set-up in GCCM and required static data is available
- Value date
- Currency of payment is same as accounts
- Internal Receipts

These checks are not designed to necessarily fail instruction but will require booking to pass through additional processing. An issue should be flagged to the users via an Accounting Exceptions queue process.

#### **5.2.1.1. Identify Reversal Requests – Ref 1.5.1.2**

Entries that have been sent to the Accounting Engine as a result of the cancellation or amendment of a request that has previously been processed by the Accounting Engine should be flagged as a Reversal and processed separately.

All journals associated with the original request should be identified using the D&R audit trail. This list of journals should be validated against the journals that would be required to process the reversal between the two accounts as a new request. The two lists should be equal and opposite.

If the two lists of journals do not agree, then the discrepancies should be flagged to the user via the Accounting Exceptions queue process.

If the two lists agree, then the series of journals / account entries required to reverse the original request should be processed the sub-ledger.

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The effect on the accounts will be posted to DBS as part of the rolling batch process for accounting entries described later.

#### **5.2.1.2. Quoted accounts are both set-up in GCCM and required static data is available**

As soon as requests are passed to the accounting engine, there will need to be a process to check that the quoted accounts are in GCCM and that there is sufficient static available for the account for GCCM to determine the accounting required for the item.

If for what ever reason an instruction has got to this point and it turns out one of the accounts quoted on the instruction do not exist in GCCM or have insufficient information attached, then the item should fail into an Accounting repair queue.

CCM users should be able to monitor this queue and have the options to either repair items in the queue by amending account numbers or resubmit the request to accounting. (The latter assumes the request account / information has been added in the interim.)

#### **5.2.1.3. Currency of payment is same as accounts**

If either account has a different currency to the currency of the request, flag the instruction for FX processing if not already done so.

#### **5.2.1.4. Internal Receipts – Ref 1.5.1.3**

Internal Preadvice notifications should be diverted to follow the additional steps below to ensure that the booking of the receipt and the equivalent payment do not duplicate accounting entries:

1. Review activity through account to be credited to determine if offsetting internal payment has already been passed.
2. If so, then link the two requests and do not process the receipt any further.
3. If no payment is found and the debit account is quoted on the notification, then review activity through account to determine if offsetting internal payment is pending processing.
4. If so, then link the two requests and do not process the receipt any further
5. If no pending payment is found and the debit account is quoted on the notification, then email the debit account owner to request authorisation to pass debit entry to their account – Ref 1.5.1.4.
6. If they authorise the request, then create internal payment and link the receipt to generated payment. Do not process the receipt any further.

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7. If they reject the request, then cancel the receipt and pass the necessary notification back to the source of the request with the appropriate 'error' code.
8. If debit account is not quoted on the notification, then cancel the receipt and pass the necessary notification back to the source of the request with the appropriate 'error' code.

#### 5.2.1.4.1. Auto-Created Internal Payment Ref 1.5.1.5

The request to generate an internal payment from an internal preadvice should clearly show the necessary details on the request to allow the user to authorise the request and the system to generate the accounting once the payment has been correctly authorised.

The payment should be authorised with the same number of signatories as the predefined standard for the debit account, i.e. two or three as appropriate. Once authorised the request should be reacted and processed by the systems as if it was a new request submitted manually.

The authorising users should have the functionality to reject the request if they wish. Notification of the rejection should be passed back to the source of the preadvice.

The payment reference should also show that it was auto-generated as a result of the preadvice request.

#### 5.2.1.5. Value Date – Ref 1.5.1.6

The value date of the request should be checked against the current value date of the system and holiday calendar for the currency.

If the request has a value prior then the request should be flagged as back-valued if not already done so.

If the request is on a currency holiday (but not a weekend), process as value date requested (for external activity value date may have changed anyway) and hold accounting entries back from posting if *DBS will not accept postings on currency holidays*.

Request for activity on a weekend for the currency should be rejected or moved automatically to the next available value date for the currency.

The additional entries required for the back-valuation of a request will be detailed later.

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### 5.2.2. Process: Identify Correct Accounting including Intercompany Entries – Ref 1.5.1.7

With the in-house bank model in place the intention is to route payment requests between Firm entities via intercompany accounts rather than real world nostros. To prevent the growth of numerous direct intercompany positions between the paying and receiving entity, GCCM should be designed to limit the intercompany positions any entity has to a single intercompany position. This single intercompany position should that position between the entity and the Treasury entity that is responsible for funding the entity.

To accommodate this single intercompany concept GCCM may need to create multiple intercompany movements to moving funds between entities. These multiple intercompany entries should be created automatically. This section describes the process of identifying the correct accounting entries for each individual request using Funding relationship as the primary intercompany.

Note the preference will be to limit the number of Treasury entities that can act as a Funding entity to minimise the number of steps involved in moving funds. Initially it is likely that at least LBHI, LBHI UK Branch, LBAH, and LBI will be defined as Funding entities in use. Over time the intention would be to reduce the number of Funding entities to branches of LBHI or just LBHI.

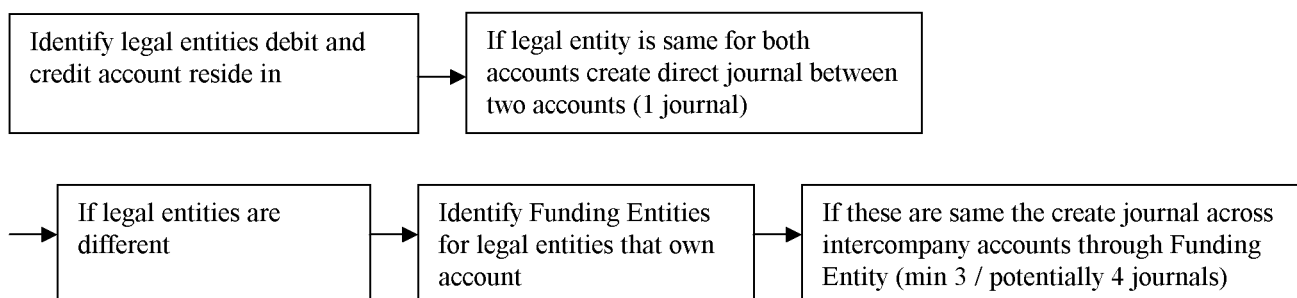
#### 5.2.2.1. How process could work

This process aims to outline the steps that should be taken to identify the set of accounting entries including intercompany records required to correctly show the movement of funds between entities and create the intercompany payable and receivable positions for the Firm's preferred funding structure.

For clarity it is worth noting that:

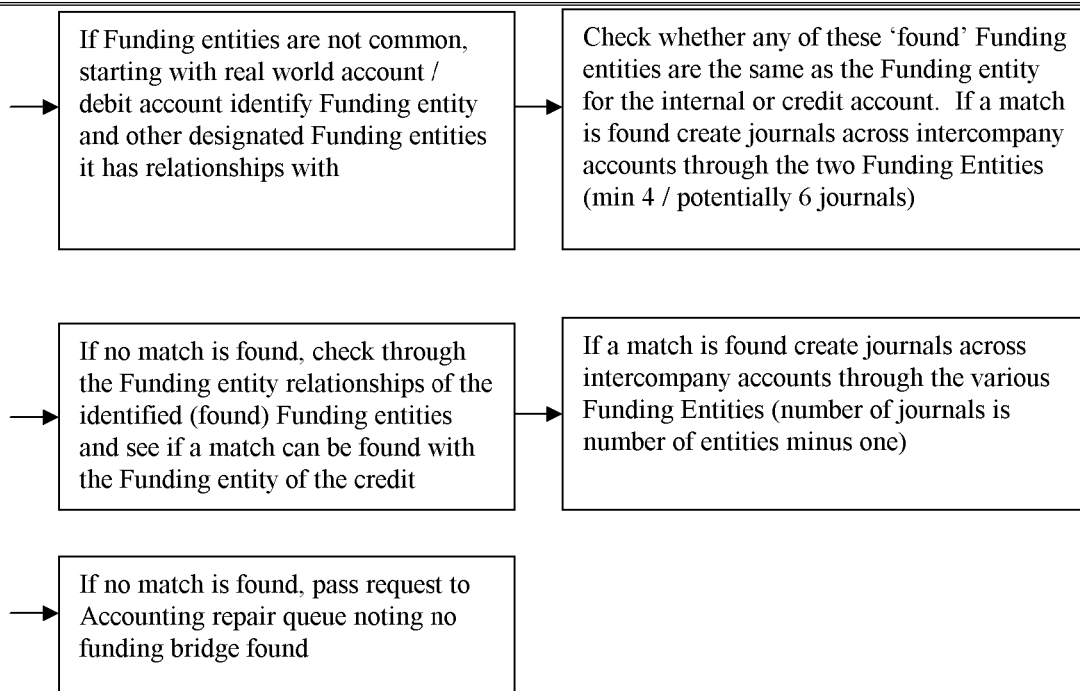
1. For Internal Payments both the Debit and Credit account will have be quoted on original request
2. For External Payments and Receipts either
  - a. both the Debit and Credit account will have be quoted on original request
  - b. or the external account number will have been assigned as part of the process of choosing of the external nostro and / or payment channel

The first step in confirming the accounting entries required involves identifying the legal entities that the two accounts quoted on the instruction belong to. These will then determine the steps that should be followed to maintain the Firm's preferred funding structure.



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This process outlined above should be successful without a significant number of steps as there are a limited number of Funding entities in existence and they will not have that many relationships between them as well. However to limit the processing time involved in finding the correct funding bridges it should be possible:

- to create a simple map of the relationships with a hierarchy table that could be used to direct the search process for the identification of the correct funding bridges.
- and / or limit the number of steps involved in the search process and pass the request to the repair queue once limit is passed noting no funding bridge was found.

Once the journal entries / funding steps have been identified the journal records should be created and the involved intercompany accounts updated.

The journals should then be created as per rules, special conditions and examples outlined in next sections. The rule set will also outline options for creating journals across intercompany accounts.

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### **5.2.3. Process Name: Create Journal including intercompany entries and cross-currency requests – Ref 1.5.1.8**

To take account information and create simple journal requirements based on identified accounts and rules outlined in Journal Rules document. Each journal should consist of the following information as a minimum:

- Debit account,
- Credit account
- Currency
- Amount
- Value Date
- Request Reference
- Unique journal reference (to be different from request reference, could be child)
- Any additional data supplied with request

Note the referencing any back valuation interest adjustment or cross-currency effect journals should be posted as separate journals but should contain same request reference id

The following sub-sections outline the accounting to be created for different scenarios identified in the preceding sections.

#### **5.2.3.1. One entity involved – no currency or back valuation effects**

The simplest scenario where debit and credit account are in same entity and the request is in the same currency as the accounts. In this case create one direct journal between the specified accounts in the GCCM D&R sub-ledger.

#### **5.2.3.2. Two entities involved – no currency or back valuation effects**

For this scenario debit and credit account are in different entities, specifically one account would be in the requesting entity and second account is in the Funding entity, and the request is in the same currency as the accounts.

In this case there would be two journals with mirrored amounts and each journal should include the intercompany accounts for the entities involved in each entity, that is

In entity A – originating account and entity A's intercompany account with Funding entity.

In Funding entity – Funding entity's intercompany account with entity A and 'beneficiary' account.

The beneficiary account would be the real world nostro if an external payment was to occur. See Appendix for internal scenario where this could apply.



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5.2.3.2.1. Example: External Payment of 100 by Treasury for Entity A

Reconciled against statement showing cash debit

Treasury Nostro		Treasury Intercompany with Entity A	
Dr	Cr	Dr	Cr
	100	100	
Entity A's Business Account with Treasury		Entity A's Intercompany with Treasury	
Dr	Cr	Dr	Cr
100			100

Reconciled against ledger credit from Ops booking for underlying activity;  
Reconciled by Ops / Firm Balancing  
Multiple business accounts may exist in entity.

**5.2.3.3. At least two entities involved – no currency or back valuation effects**

For this scenario debit and credit account are in different entities, specifically one account would be in the requesting entity and second account is not in the Funding entity, and the request is in the same currency as the accounts.

In this case there would be multiple journals with mirrored amounts and each journal should include the intercompany accounts for the entities involved in each entity, that is

In entity A – originating account and entity A's intercompany account with Funding entity and.

In Funding entity – Funding entity's intercompany account with entity A and a control account.

In Funding entity – the control account and Funding entity's intercompany account with entity B.

In entity B – entity B's intercompany account with Funding entity and beneficiary account.

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The beneficiary account would be the real world nostro if an external payment was to occur and entity B was the Paying Entity for Entity A.

5.2.3.3.1. Example: Internal Payment of 100 by Treasury for Entity A

Funding Entity	Treasury Control Account		Treasury Entity A Intercompany		Treasury Entity B Intercompany	
	Dr	Cr	Dr	Cr	Dr	Cr
	100	100	100			100
Entity A	Entity A Account with Treasury		Entity A Treasury Intercompany			
	Dr	Cr	Dr	Cr		
	100			100		
Entity B	Entity B Account with Treasury		Entity B Treasury Intercompany			
	Dr	Cr	Dr	Cr		
		100	100			

Reconciled against ledger credit / debit from Ops booking for underlying activity  
Reconciled by Ops / Firm Balancing

Entity A and B could in theory be same legal entity but different business. In this case intercompany accounts would see offsetting entries and be flat though Internal Business accounts would still show movement.

GCCM creates 'statements' for Internal Business and control accounts daily that are sent to GSSR.

See Appendix for internal scenario where this could apply.

#### 5.2.3.4. Cross Currency Request

In this scenario a user has requested a payment for a currency other than the currency defined for the debit account. Assuming this request has been properly re-authorised (discrepancy noted, a FX applied to booking and then approved) a series of additional journals will need to be created to take care of the FX.

The FX should be passed in the Funding entity rather than in the originating entity. The rate for the FX trade will either be input by a Cash Management user or will be defined in advance for a certain sub-set of

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requests (for example amounts under USD1mm may be able to use an End of Day rate or the current rate quoted on Lehman Live).

If entity A is originating entity and wants debit in currency 2 (CCY 2), entity B is Funding entity and payment is in currency 1 (CCY 1) and FX rate has been agreed

Payment

In entity B – debit entity B's control account and credit 'beneficiary' (nostro) account in CCY 1

FX booking

In entity B – debit entity B's FX exposure account and credit control account in CCY 1

In entity B – debit entity B's control account and credit entity B's FX exposure account in CCY 2 for equiv of request at defined FX rate

Intercompany after FX

In entity B – debit entity B's intercompany account with entity A and control account in CCY 2 for equiv of request at defined FX rate

Intercompany true up

In entity A – debit originating account and credit entity A's intercompany account with entity B in CCY 2 for equiv of request at defined FX rate

5.2.3.4.1. Euro In-Currencies

The accounting for Euro in currencies will be the same as for the general cross-currency requests detailed above but will be directed through specific conversion accounts.

**5.2.3.5. Back Valuation Request**

In this scenario a user request an entry with a prior value date. Assuming this request has been properly re-authorised (discrepancy noted and then approved) journals will need to be created to take care of the interest change and posted to the relevant accounts.

The booking for the principle is made in same way and is inserted into historical record with closest approximation to requested value date as stored in the 'live' database. The intention is to follow DBS concept of allowing items to be inserted up to five days prior to current value date.

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As before:

In entity A – originating account and entity A’s intercompany account with entity B

In entity B – entity B’s intercompany account with entity A and ‘beneficiary’ account

Interest is then calculated to true up positions as if payment had been made with the requested value.

(Note this may change the way external traffic is processed and so it may be that internal and external requests are treated differently so that the current external back valuation process can continue. The current process is that external costs are passed direct to originator’s nostro for their local approval and allocation to a P&L centre. The GCCM process assumes intercompany interest makes Treasury whole for an external costs – which there would not be for internal only movements where Treasury gains from one entity and pays a second. Then intercompany interest is reallocated down to the originator nostros for review and sign-off. )

Regardless of whether the principle can be inserted into the work for the value date request or exceeds the five day cut-off, and so is inserted instead on current day less the five days, the intercompany balance for the value date of the request should be recalled and updated with the back-valued request.

The updated balance should then be used to create the interest adjustment this flows into the subsequent value day’s intercompany balance which is used to create the interest adjustments for the subsequent day and so on. The calculation of intercompany interest is outlined later.

#### 5.2.3.5.1. Example of effect of back- valued request for 15

A request that increases the intercompany balance by 15 is sent with value date Today minus three days, and each of the intermediary days were valid working days.

Intercompany as of	Today - 3	Today - 2	Today -1	Today
Original bal	100.0000	150.0000	200.0000	200.0427778
Change outside interest		49.9791667	49.9683330	
Interest rate	0.0750	0.0760	0.0770	
1 days interest	0.0208333	0.0316670	0.0427778	
Back-value bal	115.0000000	165.0031250	215.0062920	215.0522794
Interest rate	0.0750	0.0760	0.0770	
1 days interest	0.0239583	0.0348340	0.0459875	
Difference in intercompany:				15.0095017
Daily difference (less principle change)	0.0031250	0.0031670	0.0032097	0.0095017

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From the above it can be seen that a journal would be created for the principle of 15 and for a total interest adjustment of 0.0095017.

Given the request was within the five day window, the journal for the principal would be passed with value date Today – 3. The interest adjustments could be passed as:

- one journal with value date today for 0.0095017
- or three journals each representing the adjustment a particular value date  
0.0031250 value Today – 3, 0.0031670 value Today – 2, 0.0032097 value Today -1.

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#### 5.2.4. Journal and Account Rules

To ensure all journals are created to a similar set of rules and that system or account breaks are limited, the following rules outline how journals should be created and accounts kept in balance. Additional rules may need to be added during detailed specification writing and once system is live, so GCCM will need to allow input of new rules without significant down time.

Some of these rules imply clean-up processes that are either automated or manual should be in place.

##### 5.2.4.1. Rules for Journals

- Journals should contain one debit account and one credit account
- Journals should not cross legal entities; that is every journal should be entity specific.
- If one account is not known or not defined, then the journal should be created against the plug account for the entity of the known account.
- Journal sets for requests that move externally must include an account defined as an external real world nostro.
- Entries should be driven from real world nostro side wherever possible.
- Accounting entries should be retained for ten years (or greater depending on longest regulatory requirement<sup>8</sup>). In addition German regulations on retention of electronic accounting records offshore (from Germany) will need to be complied with.
- For entries that cross multiple intercompany accounts (say as a result of an internal payment between two entities) GCCM D&R will need to post intercompany entries in the Funding entities between multiple intercompany accounts. To do this it could either:
  - Direct between intercompany accounts in the Funding entity(ies)
  - Via wash account in each Funding entity that must zero at the end of the day

##### 5.2.4.2. Rules for Accounts

- Intercompany accounts should be in line
  - Balancing journals should always be created, mirroring movement, even if this creates plug entry in one of the entities. (That is debit in intercompany account between A and B in entity A, would be credit in intercompany account between A and B in entity B.)

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<sup>8</sup> Note the specified ten year requirement is based on German banking regulations

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- Plug accounts should be zero. To ensure this as part of the end / start of day process there will need to be reporting on postings to plug accounts, intercompany balance differences and position reconciliation with DBS to ensure that the sub-ledger integrity is maintained.
- If intercompany balances are not to be maintained on GCCM (say instead in TWS) intercompany accounts should zero every night through wash book process.
- A clean up process for retained earnings / P&L effects on Internal Business accounts should exist (see later)
- Book to statement differences should equal outstanding / unapplied items. Any differences should be reported and investigated.

To reduce the number of differences due to the practice of agent banks deducting charges on funds paid into nostro accounts, D&R should be able to identify such amount differences and post correcting journals automatically.

This is possible on SWIFT statements (*need to check confirmations do this as well?*) where it is usually to see reference to Original Currency Amount (OCM) where charges or an FX has occurred between the debiting of the counterparties account and the receipt applied to the beneficiary's account. Amount difference charges should be identifiable when the amount credited and the OCM are in the same currency and the difference between the two numbers is limited (say USD15 equivalent).

Amount difference journals should be created simultaneously with the posting of the credit for money that has been preadvised and then matched, with the preadvised / OCM passed to the Internal Business account, the nostro debited for the amount that came in and the charges account linked to the real world account debited for the charge amount.

If funds have not been preadvised, Treasury will not absorb charge and the amount received should be passed direct to the Internal Business account.

- Annually intercompany expense / interest should be cleared wherever possible
- All accounts should be set-up to post position deltas to DBS
- All accounts should be set-up to be sent to GSSR and only accounts not to be sent to GSSR should in theory be fee and external interest income and expense accounts. Therefore default will be to send accounts to GSSR unless users selects otherwise.
- GCCM should not be creating any FX exposure except for out of currency requests. Note these will need to be hedged within Treasury and therefore there needs to be a process to provide daily currency positions to the FX hedging process to include requirements in hedged positions. Once hedging has taken place the FX positions should be cleared down.

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#### **5.2.4.3. Rules for Entities**

- Entities should be authorised for currencies during set-up process.
- Creation of an entity in GCCM should cause the creation of
  - Intercompany account with Funding Entity in entity and Funding Entity
  - Intercompany interest expense and income accounts in entity and Funding Entity
  - Plug account in entity
  - Conversion account in entity

In all currencies authorised for the entity

- Adding a currency to an entity should cause the creation of
  - Currency intercompany account with Funding Entity in entity and Funding Entity
  - Currency intercompany interest expense and income accounts in entity and Funding Entity
  - Currency Plug account in entity
  - Currency Conversion account in entity



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#### **5.2.5. Process Name: Updates required after journal completed – Ref 1.5.1.9**

This section summaries the processes and entries that should be undertaken / passed per journal after the journal has been created:

##### **5.2.5.1. Update balances**

The journal creation should update the balances of the various accounts that have been touched by the request. (While requests should have been caused a balance change in a pending settlement status the balance should now be shown as confirmed.) These should be available via the web reporting tools.

##### **5.2.5.2. Update originating system**

Once the accounting has been created, the originator of the messages should be informed that this process was completed.

##### **5.2.5.3. Update Fee account**

This account will be used to recover the costs associated with the settlement of cash request by Treasury on behalf of the Firm. Once a request has been formally accounted for, it will be assumed to have been settled and at that point the fee tracking for the originating nostro should be updated for the request.

The account will not be debited; instead there should be a tracking of activity that will record the number and type of requests for an individual originating account.

Additional charges should also accrue for the processing of cancellation and amendments.

##### **5.2.5.4. Update Interest penalty account**

For requests received in GCCM D&R after the standard cut-off for a currency has been passed (i.e. a request that failed Funding Deadline) that were settled with the requested value date, the Internal Business accounts should have their linked interest penalty account debited for a fee which is based upon the size of the request.

Accounts that have an automatic exemption to the Funding Deadline check should not be charged a penalty.

The offsetting credit will go to the Funding / Paying entities late interest account. It is envisaged that the interest penalty account will role up a Treasury P&L account to offset cost of late funding.

These costs / earnings should be validated and approved before D&R posts the interest recoveries or credits. An appropriately authorised user should then be able to approve the interest recoveries or credits.

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It is likely that at least initially the actual posting of recoveries from the individual businesses may not be processed, however the functionality should still be built into system and user would simple reject recovery at this stage.

#### 5.2.5.4.1. Charge Calculation

The basic interest charge calculation is by currency and is

$(\text{Message amount} * \text{Penalty Spread} * \text{Part of Day(s)}) / (\text{Days per year for currency})$

- The default penalty spread should be a standard amount of basis points, though users should be able to override if required
- Part of Day would be the length of time the charge should be applied for. This would vary with the particular item and would be determined per item based on how long Treasury would expect to suffer a charge for the item. So for late funded items the timeframe would be to the next available value date that is yet to be funded (so next day for Euros after cut-offs) whereas items that caused the debit cap to be exceed would be charged only for part of the day.

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### **5.3. Daily Accounting Process – Ref 1.5.2 and 1.5.3**

This chapter details the account postings for DBS that will be generated within the in-house bank once a currency has closed for the day and certain of the control process required to ensure the integrity of the sub-ledger.

#### **5.3.1. Process Name: Morning reconciliation processes – Ref 1.5.2**

To maintain the integrity of GCCM as a sub-ledger, that is in line with the real-world and to ensure all the relevant journals have been passed within DBS, a series of automated reconciliation process should be developed. In particular GCCM D&R should receive and be compared with:

- A download of all external accounts from GSSR showing balances for each account and last statement dates.
- A download from DBS of balances for GCCM source code activity for all accounts that show a GCCM source code posting<sup>9</sup> or balance.

##### **5.3.1.1. GSSR Download – Ref 1.5.2.1**

To source the real world start of day balances for the accounts it hosts, GCCM D&R should receive at least one daily file of the account balances showing the last time a statement was received by GSSR. In practice it may be easier to receive files by currency to ensure accounts are updated in a timely manner (i.e. so JPY accounts on GCCM do not have to wait for USD account statements to arrive).

For each real world account in GCCM the latest balance should then be extracted and added to the records for that account within GCCM. GCCM should also store the latest statement date for each account and allow users to identify accounts where the statements are not current.

Note GSSR as currently set-up by Firm Balancing does not differentiate between Internal and External reconciliations and so:

- Cash Mgmt will either need to agree a process of flagging accounts on GSSR as internal and external as part of changes for GCCM with GSSR Technology
- or take all account balances from GSSR and extract the external accounts by comparing the balance list against a list of internal reconciliation pairs (not NWM database as yet) identifying non-real world accounts on GSSR.

Any unidentified accounts should be published to a user list for review. The CM users will then be responsible for setting up any new external accounts with the correct balance. The CM user should also be

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<sup>9</sup> Each system that posts to DBS is assigned a unique code to distinguish the source of the entries. This unique reference is called the source code. It is also understood that the system tracks the balances by source code and so it should be able to extract the balances for all GCCM activity easily.

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able to add accounts to the internal reconciliation list to be included in the review noted above and so ignored from future downloads from GSSR.

#### **5.3.1.2. DBS Download – Ref 1.5.2.2**

To ensure the internal integrity of the accounts it hosts, GCCM D&R should receive at least one daily file of the balances from DBS of accounts showing a GCCM source code entry.

For each account balances exported by DBS, the balance in DBS should be compared with the balance of the equivalent account in GCCM. Any balance discrepancies should be published to a user list for review.

Note that the process of comparing balances should allow for multiple accounts in GCCM posting / rolling up to one account in DBS, in which case the net sum of the GCCM balances should equal the DBS balance.

GCCM should check that it has no account with a balance that is not represented in DBS, unless that account has been specifically excluded from posting to DBS. Any accounts with a non-zero balance and activity on GCCM but not on DBS should be published to a user list for review.

GCCM should identify DBS accounts showing a balance created by GCCM that cannot be matched to a GCCM account. Any such accounts should be published to a user list for review.

#### **5.3.1.3. Plug and Suspense accounts – Ref 1.5.2.3**

Details should be published of all accounts in GCCM defined as plug or suspense that have a non-zero balance at the start of the business day for the currency of the account.

Note plug accounts should be cleared daily, so it would be useful to have aged analysis reporting included in the end / start of day process.

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### 5.3.2. Process Name: GCCM End of Day processes – Ref 1.5.3

Though GCCM is not to have a proper batch, certain processes will need to occur at the end of the business day as part of the transition to the next value date. The following section details the business events that need to occur; it is expected certain technology events will have to occur on a regularly / daily as well.

To allow for at least 24 by 6 (24 by 7 would be preferred as it avoids constrictions at each end from USD close Friday and reopen for Monday on Friday) processing it is suggested that at 'end of day' time is set for each currency and at the point this is reached the listed processes are undertaken for activity in the specific currency. (Currencies could be grouped or individually specified as opening 5 or 6 days.)

Note that for individual currencies the 'end of day' point will not always be midnight in the appropriate time zone, though this is a general default. Therefore the system will need to allow a user to define the end of day for a currency.

In particular the USD business day will need to end prior to midnight so that GCCM can ensure that it has the same value date as the FED, which can reopen for next day value at 9pm EST on the prior day.

These end-of-day processes should not take involve the system 'locking' or going down. Instead requests after the closing time has been reached should be processed on next available value date with back value if appropriate.

#### 5.3.2.1. Produce export for reconciliation and paper statements – Ref 1.5.3.1

To ensure that the Firm continues to operate in a controlled environment, both internal and external accounts will need to be reconciled. In particular for business lines that convert external accounts to Internal Business accounts with the in-house bank, GCCM needs to produce account history statements that can be used to reconcile trade postings against.

In order to send data to the Firm's reconciliation system and satisfy external reporting requirements, GCCM will need to be able to send data both to GSSR via electronic feed and also produce printable statements. These statements will not have to be printed daily and could be sent to an on-line storage area such as Infopac.

The statements should follow the layout of the MT940<sup>10</sup> but with additional data supplied that can either be read by GSSR or not. (It is likely that GSSR will not make use of the additional data straight away but will take it in over time.) In particular GCCM D&R should produce statement files with

- A breakdown of fields that would be concatenated for the MT940 Further information field

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<sup>10</sup> The statement format used should be the one that passes on the most information about the individual transactions as possible.

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- Any information supplied with the request from a source system

In fact GCCM should be able to create a fully formed MT940 that can be sent to Swift.

Paper statements should follow similar formatting rule but be formatted to print on standard header paper (note Lehman's default for headed paper is portrait).

5.3.2.1.1. Example of MT940

Account Number 123-456789

Statement Number 102

Opening Balance: Euro (EUR) 6,723,495 (Credit)

The details of the transactions contained in the statement are as follows:

Transaction 1	Value Date: 13-05-2003	Debit: EUR 64.23
	Transaction Type: Cheque	
	Reference for the Account Owner: 78911	
	Reference: 123464	

Then closing balance info

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#### **5.3.2.2. GCCM D&R End of Day Account Posting – Ref 1.5.3.2**

While GCCM is not expected to have a traditional batch, certain activities will need to occur as part of the transition to a new business day including posting summary activity to DBS.

The system should complete the following steps to create the daily upload to DBS:

- Calculate position deltas for each account where the delta is defined as the prior end of day versus current end of day balance.
- Record differences in a file in DBS readable format
- Back-valued amendments should be processed with the value date appropriate for the entry and written to same file.
- The entries should then be passed to DBS and a copy of the file stored on-line.
- Entries should be posted in the currency of the account in D&R not converted to USD or the functional currency of the entity.

If possible GCCM D&R should make use of the DBS Sub-ledger process that is currently in design / technical specification.

##### **5.3.2.2.1. Effect of Back Valued Requests**

For accounting purposes, whether external or internal nostro accounts, GCCM should pass to DBS restated balances or amendments to incorporate back-valued request for requests back-valued less than five day.

For requests to a date no longer live in D&R the items should be posted into DBS with the value date of the oldest live date on D&R and the subsequent balances amended.

##### **5.3.2.2.2. Example**

For example assume today is Monday August 2<sup>nd</sup> and a payment is sent for value Thursday July 29<sup>th</sup> across an External Account.

For DBS send amendment to End of Day balance for value July 29 to incorporate principal  
Send amended Start and End of Day for value July 30<sup>th</sup>  
Send amended Start of Day for value August 2<sup>nd</sup>

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### 5.3.2.3. Intercompany Interest – Ref 1.5.3.3

This section outlines how GCCM D&R would take over the intercompany recover of the cost of funding payments and receipts on behalf of the business. The process outlined will need to be discussed with the Financial Controllers, ALM and Global Carry to ensure they agree change from TWS, etc.

The cost of funding the Firm's payment activity is claimed from business by charging debit interest to entities borrowing from Treasury, that is where the intercompany position is the Treasury entity's books is a debit. In turn credit interest is paid to entities by Treasury as an incentive to have entities return funds to the holding company.

The rates at which credit and debit interest is paid are set within ALM and the default rate is the Treasury Index rate. Currently the Index rate is 1 week LIBOR flat; reset daily and there is no difference between credit and debit rates, though GCCM will need to be able to allow different indices and a spread to be added to allow for future changes.

Interest is generally charged daily so that the standard period to be used in the interest calculation will be a single day or three days at the weekend.

Though the bulk of entities will earn or pay at the default Index rate over the standard period, CM Users should be able to include an alternate index for the calculation of intercompany interest and period at the set-up of the intercompany accounts for an entity.

#### 5.3.2.3.1. Intercompany Interest Calculation

The following steps briefly outline the process to calculate and post intercompany interest on a daily basis (for background consider the process followed within TWS). If possible intercompany interest should be calculated independently for each side of the intercompany relationship and the two numbers compared before the entries are posted.

The basic interest calculation for intercompany interest recovery is by currency and is

$$(\text{Intercompany position} * \text{Agreed Intercompany Rate for Position} * \text{Day Period Count}) / (\text{Days per year for currency})$$

- Where the intercompany position is as per recorded in the GCCM
- The default for Intercompany Rates will be the Credit / Debit Index rate:
  - Index rate is as defined by ALM and is generally a set percentage above 1 week LIBOR. As percentage changes occur over time this should be user definable.
  - It would also be useful to be able to define index to be used as well to allow for future changes.
- Any other rate to be used would be manually defined and should be included in set-up for the interest expense / earnings accounts for the intercompany position



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- Note at the moment the credit and debit index rates are the same but GCCM should apply the
  - credit rate to long balances with Treasury (i.e. where the intercompany position is the Treasury entity's books is a credit)
  - debit rate to short balances with Treasury (i.e. where the intercompany position is the Treasury entity's books is a debit)
- 'Day period / count' is the number of days since interest was last calculated
  - e.g. one day mid week, three days over normal weekend, two, three or four where a bank holiday occurs mid-week or attached to a weekend
  - Have to be mindful of split month end. If last day of the month is Saturday, for example, on Friday, then have to pass to DBS 2 days' worth of interest and hold onto Sunday's interest and post to DBS along with Monday's in the new month.
- 'Days per year for currency' is the market convention for the basis for interest rate. Should be set as part of the static data set-up for the currency
  - E.g. USD would be 360 and GBP 365

#### 5.3.2.3.2. Reconfirm prior days intercompany interest

To allow for back valuation of items into the live database, intercompany interest for the past four days should be calculated alongside the current day. Each day should be taken in turn, so that the effect of a change in the intercompany interest for one day can be followed through to its effect on the intercompany position for subsequent days.

Any differences between the posted interest and the recalculated interest should be posted. In this case a journal reversing the old amount should be created as well as a new posting with the new number. GCCM should retain the old number for historical purposes but use the recalculated position for future reporting.

#### 5.3.2.3.3. Post to intercompany position – Ref 1.5.3.4

Note as accounts are internalised the only way for business to pay the cost of funding is to borrow more from Treasury, therefore the recovery of interest by Treasury for funding a payment would be

- Debit i/co account in Treasury entity Credit interest earning for i/co

And to mirror this GCCM would also post

- Debit i/co expense in originating entity Credit i/co with Treasury

The effect of these entries on underlying accounts would then be posted through to DBS as part of all position changes reported to DBS

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5.3.2.3.4. Create GID posting file – Ref 1.5.3.6

To allow ALM to track Treasury P&L activity, GCCM D& R should create a daily update file for the GID / Debt Database to maintain integrity of Treasury P&L calculations. Detail of requirements should be available within Treasury Tech (position or transaction changes for intercompany accounts)

5.3.2.3.5. GCCM DBS Postings for Interest – Ref 1.5.3.5

The system should complete the following steps to create the daily interest upload to DBS:

- Calculate position deltas for each account as a result of the creating of intercompany interest journals where the delta is defined as the prior end of day (pre-interest calculation) versus the end of day balance including interest.
- Record differences in a file in DBS readable format
- Back-valued amendments should be processed with the value date appropriate for the entry and written to same file.
- The entries should then be passed to DBS and a copy of the file stored on-line.

This process could be merged with the general upload of data to DBS referenced above.

5.3.2.3.6. Effect of Split Month End

How to handle the impact caused by month end falling on a non-working day: **The following needs to be checked out with Financial Controllers.**

Essentially activity that relates to a month should be contained within the month, so where interest accruals would cross a month end, GCCM should process the interest up to the month and post this. Then as a separate entry process the interest from the start of the month up to the next value date.

The basic interest calculation for intercompany interest recovery is by currency and is

- $(\text{Intercompany position} * \text{Agreed Intercompany Rate for Position} * \text{Day count}) / (\text{Days per year for currency})$
- 'Day period / count' is the number of days since interest was last calculated
  - e.g. one day mid week, three days over normal weekend, two, three or four where a bank holiday occurs mid-week or attached to a weekend

Where month end falls on a working day this is simply the difference between the month end and the prior working day.

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For split month ends

The interest calculation has to be split as interest:

- up to the month end with the day count equal to the difference between the month end and the prior working day
- from the start of the month with the day count equal to the difference between the start of the month and the next working day

This may best be showed by an example:

This year Feb 04 was a split month end and so interest over weekend 27th Feb to 1<sup>st</sup> March would have been split as:

27<sup>th</sup> Feb to 29th Feb so day count is calculated as the difference between these dates

29<sup>th</sup> Feb to 1<sup>st</sup> March so day count is calculated as the difference between these dates

#### 5.3.2.3.7. Effect of Back Valued Requests

For accounting purposes, whether external or internal nostro accounts, GCCM will pass to DBS amendments to reflect the cumulative intercompany interest with the current day interest posting provided that it doesn't cross month/year.

If the back-valuation request crosses month or year end, then the intercompany interest recovery should be split and reported accordingly.

#### 5.3.2.3.8. Example

For example as before with reporting, assume today is Monday August 2, a payment came for back value to Thursday July 29 across an External Account.

For DBS send interest amendment for the three days' interest with value date of July 31 (29<sup>th</sup>, 30<sup>th</sup> and 31<sup>st</sup>) and send a second amendment for one day's interest (1<sup>st</sup>) with value date of today.

The effect of the recovery of the intercompany interest for the second should form part of the overall recovery for today.

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**5.3.2.4. GCCM D&R DBS Account Posting Reconciliation – Ref 1.5.3.8**

Once the activity file(s) showing changes in account positions have been sent to DBS for posting to the GL accounts, it is expected that DBS will acknowledge receipt of the file and also the successful or not posting of the various journals back to GCCM D&R.

D&R should take in these acknowledgements and reconcile the postings against the file of entries it has stored. Any discrepancies or failed postings should be reported to the users.

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#### 5.3.2.5. Core Static Updates

The system should update the following system settings and core static:

- Value date – this will be currency specific and it is possible that multiple value dates will co-exist within the system as today's date.
- Currency LIBOR rates (or Index rates)
- Escalation limits
- External Account information - details from NWM database of any new account openings or account closing. The records should be compared with external accounts set-up and changes flagged.
- Signatories' information - details from signatories database of any cancellations of authority for authorised signatory. The records should be compared with GCCM users and matches flagged.
- BIC and ABA Numbers files – daily refresh of tables stored in GCCM for validation purposes versus central source and updated versions loaded (Note sources maybe either internal BIC or external).
- Offline storage – should be updated with 'printed' statements (e.g. Infopac); copies of data sent to Frankfurt; back-up of records for BCP

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#### **5.4. *Month End Accounting processes – Ref 1.5.4***

Like the end of day process this section only defines business processes and does not touch upon IT driven processes that may need to be undertaken, though it is expected that some generic clean-up processes would be run including the archiving off-line of significantly older (for example greater than 24 months) data.

In particular it outlines processes to recovery payment charges (if this has not been done on a booking by booking process) and interest from the underlying Internal Business Accounts.

Note that these particular functions will need to be built into GCCM though they may not be switched on when GCCM goes live as the process is a departure from the current set-up. Therefore they will need to be agreed by all parties and this may be easier to do once all OTG systems are feeding GCCM.

##### **5.4.1. Create Month End statements for accounts**

As part of the month end processes once the month has closed (including for back valued items and in line with DBS) then a statement of activity should be generated for all accounts and sent to Infopac for record keeping.

In addition for specific accounts GCCM should be able to generate a month end statement showing all activity that can be sent out as a self contained record in a printable format.

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#### **5.4.2. Recovery Fees for D&R activity – Ref 1.5.4.1**

As part of GCCM's tracking of activity it will be recording the number and type of requests for an individual originating account. This record can then be used to calculate a cost for that activity to be passed to the individual business account to recover the expenses incurred for settling the individual requests.

Depending on the quality of the messages that have been sent to GCCM D&R, the business account should be debited with a combined cost for its STP and non-STP messages. The cost should be calculated as the sum of:

- the standard charge for a STP processed message times the number of such messages,
- the standard charge for internal processed messages times the number of such messages,
- the repair charge for a message that had failed one of the validation checks other than Funding Deadline check times the number of such messages.

These costs should only be posted if the flag at the Business Level allows D&R to posts the recoveries.

It is likely that at least initially the actual posting of recoveries from the individual businesses may not be processed, however the functionality should still be built into system and the flag to charge would simply be set to No recovery at this stage.

If the function is up and running, D&R should then create a series of journals to debit the individual Internal Business accounts.

The credit offsetting the above debit will go to the intercompany account with Funding / Paying entity that settled the messages on behalf of the originating business account. In turn a debit will be passed to the offsetting intercompany account and a credit to the Funding / Paying entity's fee recovery account. It is envisaged that the fee recovery accounts will roll up to a Treasury P&L linked to the agent bank fee line.

As with all entries, their effect should be passed to DBS and be included in the daily and monthly reporting.

#### **5.4.2.1. Report Fees – Ref 1.5.4.2**

Regardless of whether the authorised user rejects the recovery, D&R should still generate a report to be attached to the underlying Internal Business account that details what was or would have been charged. The report should detail the amounts to be reclaimed and the net effect showing the split between STP and non-STP messages.

If possible the report should separately detail the reasons why messages were classed as non-STP and the repair, so that the Operations settlement teams can improve their STP rates and reduce their costs.

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#### **5.4.3. Recovery Funding Expense for D&R activity – Ref 1.5.4.3**

To potentially bring further clarity to the Carry process, it is envisaged that GCCM D&R should include a process to recovery interest expense / allocate interest earnings within each of the non-Treasury entities on GCCM to the individual originating business accounts.

For this to work the interest recovery calculations described for the daily process for the intercompany account should be undertaken on each of the originating business and external accounts generating a Funding requirement (this would include Internal Business and Real World accounts) in the entity for the entire month's end of day balances. The net total of credit / debit interest for the balances on the account would then be the amount to be recovered / credited to the individual account.

Note for credit interest need to understand if GCCM D&R should be calculating withholding tax at all.

These costs should only be posted if the flag at the Business Level allows D&R to posts the recoveries.

It is likely that at least initially the actual posting of recoveries from the individual businesses may not be processed, however the functionality should still be built into system and the flag to charge would simply be set to No recovery at this stage.

If the function is up and running, D&R should then create a series of journals to debit or credit the individual Internal Business accounts with offsetting entries passed to the entity's intercompany interest fee or earnings accounts as appropriate.

As with all entries, their effect should be passed to DBS and be included in the daily and monthly reporting.

#### **5.4.3.1. Validate versus Daily Recovery from the Entity – Ref 1.5.4.4**

To ensure that Treasury is recovering the required amounts from the various businesses, after the recoveries for the Internal Business and other accounts in an entity have been calculated GCCM D&R should report the net recovery by account, the total across the accounts, the amount recovered through the month from the entity and the over or under recovery from the originating accounts. This report should be available for review by entity or across all entities.

Note that while credit and debit interest rates are equal, it should be that the net activity for all originating accounts in an entity should equal the amount recovered from the entity by Treasury.

#### **5.4.3.2. Report Recovery – Ref 1.5.4.5**

Regardless of whether the authorised user rejects the interest recovery or credit postings, D&R should still generate a report to be attached to the underlying Internal Business account that details what was or would have been charged. The report should detail the amounts to be reclaimed and the net effect showing the split between credit and debit interest for each of the day's balance.



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## 6. Other and Future Considerations including Ref 1.6

This chapter details a number of more general developments required as part of the build and areas for consideration for the implementation of D&R.

### 6.1. Glossary of Specific Terms

#### 6.1.1. Start and End of Day

Due to the international nature of the cash market and the Firm the start and end of day for a currency may not tie in with the formal close of the Firm's book and records for a particular value date. Therefore it is proposed that:

Currency or settlement start and end of day should refer to opening and closing of the main clearing system for the particular currency; for example the FedWire opening and closing times for USDs.

That is the default value date of the system should match that in operation for the currency clearing system. So JPY could be value tomorrow while USD was still today.

The system should also recognise a processing start and end of day for a currency for a particular value date that could be longer than the external opening; during this extended period messages could be received and internal requests settled.

The actual System start and end of day would parallel the opening and closing of a value date on DBS.

In summary:

- System date and time – tied to DBS and date will roll forward when DBS changes
- Currency value date – the value date for the currency in its major market
  - Closing times will be set to allow external activity to be processed and internal settlements to continue for a period after the market closes
  - Once the DBS postings have been generated the currency value date should roll forward. This may be independent of the system date move.
- Local time should refer should to adjusted time for the local user.

In addition there will exist:

- Funding deadlines – set and checked as part of STP engine; this will determine whether instruction can be effectively funded by Treasury
- Account specific deadlines – which will override the currency processing deadlines and restrict the time period instructions can be sent to the agent for the particular account.
- Note for both funding and account specific deadlines the restriction may not be for the current value date but may actually indicate value days forward as well.

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#### **6.1.1.1. Example**

For a example a local Japanese based user could send a USD payment to D&R at 8am local time with value date 14th September, that could be released externally from 10:30 local time though it is 13<sup>th</sup> September at 21:30 on DBS / D&R in New York and US (West coast) users or sources may still be requesting book to books / internal requests for value date 13th.

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### **6.1.2. GCCM D&R State Terms**

Term	Definition.
Rejected (Following Action System Reject)	Applied to messages that have been sent to the Gateway function so poorly formatted that it would be impossible to create a record from the data sent.
Requires Repair (Following Action Send to Repair)	Applied to messages that have been sent to D&R or manually input with sufficient data to create a record from the data but with some aspect that fails a user or STP engine requirement.

### **6.1.3. GCCM D&R Terminology**

Term	Definition.
Business Account	Accounts used by business for ledger postings (i.e. ledger); could actually represent Control / Dummy nostro account or real world account
Internal Business Account	Business Account that has no real world equivalent; i.e. a Control / Dummy nostro account

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## **6.2. GMC – Generic Messaging Component**

Strategically the Firm has decided to create a series of generic application and messages processing interfaces, to be referred to as the Generic Messaging Component (GMC), between its various system layers to minimise the disruption of a change in either an internal system or external messaging format.

The process of creating the GMC has begun with the implementation of a SwiftNet compliant platform for messaging with Swift that will be used to retire MERVA. Over time it is expected that additional external communication processes / channels will migrate onto the GMC, with the GMC accepting standard formatted messages that will be translated into the appropriate format for the external processes or channel.

Eventually the GMC will be used to create standard interfaces between the Firm's trading and settlement systems to allow these to be upgraded independently of each other.

As a result GCCM will be expected to communicate directly with GMC for SWIFT messaging as part of its Phase One implementation.

Moreover GMC offers the opportunity to expand the interfaces available to GCCM more readily by leveraging the translation engines imbedded in GMC to allow GCCM to create standard Swift formatted cash messages that are transformed within GMC to alternative formats including batch files.

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**6.3. *Month end integrity 1.6.1***

AS D&R is acting as a sub-ledger for cash activity, it is assumed that it will need to be validated against external and DBS records as part of the month-end processes undertaken within Finance.

At the current time it is not clear how significant this process will be and whether the daily reconciliations cover the requirements. To be discussed with Financial Controllers.

The system should also run through a number of checks to clear memory caches, etc. to ensure the system maintains peak performance.

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#### **6.4. Archiving – Ref 1.6.2**

D&R should retain 25 months worth of data on-line in its historical database. As part of the month end integrity processes, D&R should clear out and archive a month's worth of data to maintain a rolling database of 25 months.

The archived data should be securely stored in line with Firm and Regulator requirements for accounting records.

In addition for the month that is archived a summary of the traffic that has passed through the system should be created and stored in a distinct database available to a limited number of users. This distinct database should grow as data is added and act as an on-line repository for all of the messages that have passed through GCCM D&R.

The users should be able to query / search for payment, receipt and account data in this separate database and users should be able to copy data from the database to circulate search results to a wider audience.

Copies of all data including back-ups and archives should be retained for at least a period that complies with the most stringent requirements imposed on the Firm globally from a regulatory body. Currently this is believed to be ten years for Germany.

##### **6.4.1. Frankfurt Archive**

A copy of the month archive should be passed to Frankfurt once the monthly archive process is complete to ensure compliance with BAFIN regulations.

This is in addition to supplying a copy of all live data records (live and on-line history) to a back-up server in Frankfurt.

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**6.5. *Retained Earnings and Automated clearing of accounts – Ref 1.6.3***

To ensure that the Internal Business accounts hosted by the system do not accrue large unexplainable balances due to the cumulative effect of historic activity, there will need to be a process to clear down the internal accounts in D&R and the offsetting accounts in the Settlement Sub-ledgers. The process can be thought of as a semi-automated retained earnings process, which would clear certain balance sheet / P&L accounts to a pre-defined set of retained earnings / P&L accounts by entity as part of year end closing.

For each Internal Business account the balance on GCCM D&R should be compared with the balance of the Settlement system that has the offsetting entries for the payment activity. After allowing for any cash reconciliation breaks due to cash activity either not in D&R or not in the Settlement system, the balance should be cleared to a conversion / retained earnings account in both systems, leaving both accounts with a zero balance except for the reconciliation breaks.

Across an entity in D&R the process is essentially a series of internal payments to / from the retained earnings account for the entity to the short / long accounts that have balances that need to be cleared. The effect of the resultant entries should be posted to DBS as part of the normal overnight postings. Even if the above process is not fully automatic, any automation may help in later years as the number of Internal Business accounts on GCCM D&R increases.

The process should run at year-end and each time will need to be discussed with the Financial Controllers to ensure corresponding entries are passed in the Settlement systems simultaneously. In fact it should be possible for the Settlement system to generate the requests for these internal payments and to send them to D&R.

A similar clear up process should be followed within the Treasury entities for the interest accounts (internal intercompany and external) and fee accounts on an annual basis.

Note GCCM will need to be flexible enough to run the process at various times for specified entities, to allow for different year ends, and even on a limited number of accounts within an entity, to allow for co-ordination with the Controllers and Settlement systems. Accounts that need to go through the process will need to be identified as they are set up (defaults may exist but we will need to think what these are in advance).

As part of the review of process it would be worthwhile investigating how the ITS retained earnings process works for comparison with the below.

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## 6.6. Recovery Requirements

All applications in the Lehman business environment are assigned a tier rating for purposes of business continuity. The most critical business tier rating of 1 is reserved for applications which perform any of the following mission critical business functions: funding, clearing and settlement, position management, risk management, and order management (only to the extent of processing existing orders, not to accept new ones)<sup>11</sup>. These are the functions required to close out a business day in the event of incident to keep the Firm afloat without any reputation loss.

Because of its participation in the funding process, GCCM is considered at the least a Tier 1 application.

The characteristics of a Tier 1 application are as follows:

- Must be recoverable to an alternate data center and be rendered operational in 4 hours or less
- “Operational” means that the critical business functions are available, not necessarily that all application functions are restored to the exact SLA as in normal production mode
- All data must be recovered to point of failure
- Other recoverability criteria must also be met:
  - Production code must be stored in a central source code repository
  - Production jobs must be run out of a central scheduler
  - Data must be mirrored in a data center other than where the primary production instance resides
  - Application must have a TAP failover script created and must undergo TAP failover prior to rollout and retesting every 6 months
  - The application must be registered in ADb with a DR instance representing the failover scenario for each production instance

### 6.6.1. Scenario Specific Recovery timeframes

However the requirement of 4 hours should be seen as extreme and instead the system should be designed:

- for instant fail over for a number of scenarios
- under 1 hour recovery for most other scenarios

Specifically the following scenarios should be covered

#### 6.6.1.1. No evacuation of building

- Limited problems, specifically issues with user access servers - instant failover
- Middleware issues - instant failover
- Application as opposed to server hardware issues - within 30 mins; no more than 1 hour with no loss of data

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<sup>11</sup> Any questions relating to application recovery requirements or exceptions should be directed to the Business Continuity Management team (BCM)



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- Primary machine failure - secondary server on line with minimal disruption in no more than 1 hour with no loss of data

#### **6.6.1.2. Evacuation of building but data centre not effected**

- Reconnect directly from back-up location or other CCM site can take up processing

#### **6.6.1.3. Data centre in region effected**

- No more than 1 hour alternate data centre (in separate region) can take up processing
- Frankfurt copy of database & application acts as tertiary back-up for complete rebuild - potential loss of activity from day.

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## **6.7. *Business Rule Control***

A number of the controls and choices implicit in the functioning of GCCM D&R are dependent on a number of business rules that are used to determine defaults and overrides for messaging. These rules will be key controls and as such will require a process to manage their change and implementation to prevent ad-hoc changes disrupting flows through the system.

The process of rule change should include a proposal stage, user acceptance testing to ensure changes satisfy requirements, verifiable regression testing to ensure changes do not effect existing rule-set unintentionally and audited implantation.

Moreover this change process should be available to a control group of users rather than being a Technology driven process; i.e. users can set-up and test without significant technology resource.

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## **6.8. *Regional Specific Issues***

### **6.8.1. Frankfurt**

#### **6.8.1.1. BAFin Cross-Border electronic Processing**

GCCM should be developed to comply with the Germany Banking Regulators, BAFin, Pronouncement of October 16, 1992 on the Employment of Cross-Border Electronic Data Processing Facilities for Bank Accounting Purposes that details the requirements for German banks to operate on systems hosted outside of Germany. The pronouncement details 17 rules that should be complied with.

Of key consideration is the twenty four rule, which is understood can be complied with by sending a copy of the database to Frankfurt each night. This remote server can also act as a tertiary back-up service for the system, should both primary and back-up servers fail.

A copy of the rules is available on request.

#### **6.8.1.2. AWV Reporting**

Once GCCM D&R is live it should be possible to migrate the current AWV reporting into the D&R reporting suite on the assumption that D&R should be responsible for all such activity.

The AWV reporting is understood to be the requirement to report all cash payments above a certain threshold from or on behalf of a German bank or institution to a non German resident institution or individual.

The report is currently collated from manually from multiple sources

A copy of the requirement is available on request.

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### **6.8.2. Tokyo**

To create a straight through processing environment based around Swift standards and western characters rather than the use of stand alone applications in kanji, Tokyo Treasury have been migrating their JPY nostro accounts to support Swift Zengi formatting.

The translation process necessary to send Swift messages under the Zengi set-up should be built into the definition of the nostro accounts and message creation.

Specific definitions are available from Tokyo Treasury and Treasury Technology.

#### **6.8.2.1. Japanese Domestic Payments**

Currently Japanese domestic payments are made by Tokyo Cash Management through a variety of agent bank supplied proprietary links that support kanji characters.

Though Tokyo Cash Management are migrating certain of these accounts to Swift Zengi and so the accounts can be managed using the Firm's existing SWIFT infrastructure and Roman characters, it is expected that a number of accounts will not migrate.

Instead as part of the development of GCCM D&R, at least one payment channel that supports kanji characters will have to be integrated with the basic platform. At the moment it is not clear if any of the kanji based systems can translate a roman character based payment into the required format for release to the agent bank or whether D&R itself would have to undertake this translation.

Further analysis will be required to understand the functionality of the existing proprietary links and any alternate payment engines available for Japan.

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### **6.8.3. New York**

As common with other US institutions, New York has a high volume of cheque processing and it would be worthwhile to centralise this processing via D&R.

It is probably that additional information may be required for cheques, such as recipients address that it maybe worthwhile adding into the definition for individual payment requests from the initiation of the project even while the cheque writing software to be used is to be determined.

One option to be considered is the outsourcing of the cheque issuance and dispatching to a third party where GCCM D&R is just required to deliver a file of the relevant details to the third party. In this case GCCM D&R may be able to use the batch writing process to create a file that is transmitted electronically without having to define an additional specific payment channel for cheques.

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## **6.9. Upgrades**

The development of D&R has been limited at this stage to key functionality though already a number of further requirements have been identified. This sections summaries these so that the system can be built to allow for them and further work into the detailed requirements for each will be undertaken during the technical and build phases of D&R.

### **6.9.1. General**

The system should be hosted so that capacity for the system can cope with a significant increase in activity for a limited time (as short as one day) and be easily increased without creating an expense bottle neck and. In particular there should be the ability to expand system resource without having to go through a process of gaining approval for a new server / box each time.

Therefore as part of the technical specification, it will be worthwhile considering how to build the system so that new resources can be assigned to the processing application and database from a server farm on a real-time basis.

### **6.9.2. Upgrades for Payment STP Engine**

#### **6.9.2.1. Formatting**

The current simple payment formatting checks to be replaced by more sophisticated checks that will allow for regional, country and even agent bank specific requirements for STP messaging

- Incorporate CCM input funding requirements into the deadline checking process as a second level of funding deadlines
- Validation of key local clearing codes
  - Sort codes
  - Fed wire codes
  - BLZ codes
- Ensuring market developments or practise that effect STP can be incorporated: For example
  - Non Swiss domiciled members of CHF clearing system
  - Local clearing of USD in Hong Kong
  - Euro clearing via UK
  - Internal transfers within one bank / branch
- Beneficiary account field - ability to add to current list of restricted strings - For example Claims Tracking enter a full stop in this field when they have no account number to quote.

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6.9.2.1.1. Agent specific formatting

Certain of the Firm's nostro Agents impose their own STP requirements that exceed the basic SWIFT requirements for payments sent to them. The following section shows summary requirements for Deutsche Bank who are LBHI UK Branch's current Euro agent.

6.9.2.1.1.1. Deutsche's STP requirements for MT2xx and MT103 payments

Hereafter please find the description of Deutsche Bank Germany's straightthrough-processing requirements in detail. Payment instructions not meeting these STP requirements are considered as repair items.

MT103 (customer payments)

A S.W.I.F.T. MT100/103 payment order is considered as "straight-through" if the below criteria are fulfilled:

- Bank fields 52, 54, 55, 56 should only be present in S.W.I.F.T.-option "A";
- Whilst we prefer to receive field 57 in S.W.I.F.T.-option "A", we still accept field 57 in S.W.I.F.T.-option "D" without counting a repair if a correctly formatted national clearing system identifier and code is used (as far as they are quoted in the S.W.I.F.T. standard field definitions);
- Other than field 57, S.W.I.F.T.-option "D" should not be used in any fields (including field 53);
- Field 72 and Field 23E should not be used. Codewords for a special service bilaterally agreed with Deutsche Bank will however not be counted as repair;
- Mandatory fields are used in line with S.W.I.F.T. guidelines. Example: Field 57a is mandatory if different from the receiver, even if field 59 contains an IBAN.

MT20x (bank-to-bank payments)

A S.W.I.F.T. MT20x payment order is considered as "straight-through" if the below criteria are fulfilled:

- Bank fields 52, 54, 56, 57 and 58 should only be present in S.W.I.F.T. option "A";
- Field 53 is blank.
  - Only if the sender maintains more than one account with Deutsche Bank Frankfurt in the same denomination, or instructs Deutsche Bank Frankfurt to debit an account of another bank (for which an authorisation of this bank is needed), he should use field 53 and will need to state the number of the account to be debited in S.W.I.F.T.-option "A" or "B".  
Example: F53: /account number S.W.I.F.T. BIC
- Field 72 should not be used.
  - The codewords "/BNF/" (information for the beneficiary), "/OCMT/" and bilaterally agreed codewords (e.g. "/CLSTIME/") will however not be counted as repair.

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#### **6.9.2.2. Payment Channels**

The creation of links to additional payment channels including

- Cheque writing link
- Fed Wire link via LB Bank for self-clearing of USD payments
- ABK link or internalise Bankhaus connectivity for self-clearing of Euro payments
- ACH links for US and UK

#### **6.9.2.3. Intraday**

Better intra day management with links to the daylight overdraft process (to be developed separately) and back to an enhanced automated funding and release process



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## **6.10. Potential Impact of GCCM D&R on Other Groups**

Rather than try and detail the impact of GCCM D&R on every area, the following lists outline items that should be addressed as part of the review of GCCM D&R with the named groups.

### **6.10.1. Operations & OTG**

- Ability to fundamental re-organise inefficient flows.
  - No longer routing traffic through FPS and other system bridges
  - Separating entities - taking LBSF & LBCC out of LBI accounts, LBF out of LBIE dummy nostros
  - Centralising and automating account funding
  - Creation of debit cap monitoring for unsecured 'free' cash intraday positions
  - Accounts hosted on GCCM - supply of data
  - Increased 'cash' settlement of securities trades / limiting direct journals between accounts to control intercompany positions
  - Internalising of flows (MTS to TMS payments) and moving away from intersystem bridge accounts
- Boundaries of Ops and CCM
  - Repair handling; who will be responsible for STP repairs
  - Manual and system payment input and responsibilities;
- IT work
  - FPS and other system retirement
  - Impact of GMC / MINT and any other major OTG IT plans
  - Resourcing of OTG work; GCCM to be classed as Firm mandatory event
- Reconciliation
  - Internalising of accounts; closing external accounts but instead unlimited internal accounts
  - Claiming of funds; less accounts more concentration and automating process to apply funds
  - Moving accounting entries from ITS in Europe / Asia
- Opportunity to develop new functionality - ability to pass more detailed information on payment / incoming funds through to clients
- SEI - Bond STP reorganisation

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**6.10.2. Finance Accounting / Regulatory / Carry**

- Internalising of accounts how does this impact each of these groups:
  - Unregulated entities
  - Regulated entities US, Europe, Asia
  - Real world cash flow requirements
- Intercompany position monitoring in real time, how can this be leveraged?
  - Could force increased 'cash' settlement of securities trades / limiting direct journals between accounts to control intercompany positions
  - Internalising of flows (MTS to TMS payments) and moving away from intersystem bridge accounts
- Carry charging and recover through GCCM; complete change to current model, would it be better?
- Management of accounting processes in GCCM; who is responsible for the sub-ledger integrity as it is multi-entity
- Moving accounting entries from ITS in Europe / Asia; how does this effect Product Control

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## 7. Legal, Compliance, and Regulatory Issues

Ref	Description	Priority
6.1	The back-up tapes should be stored and retained for at least ten years or what ever the current recommendation is for financial records issued by Internal Audit. (Ten years meets German regulations.)	M
6.2	Access to each entity should be restricted at the user level.	H
6.3	Message transfer (including screen input to database activity) should be encrypted	H
6.4	Compliance with German regulations on the use of non German hosted systems	H
6.5	Individual requests to be further encrypted to prevent identification of beneficiary; particularly required if payroll activity is migrated onto system	H

## 8. Assumptions, Risks, and Dependencies

## 9. Performance Requirements

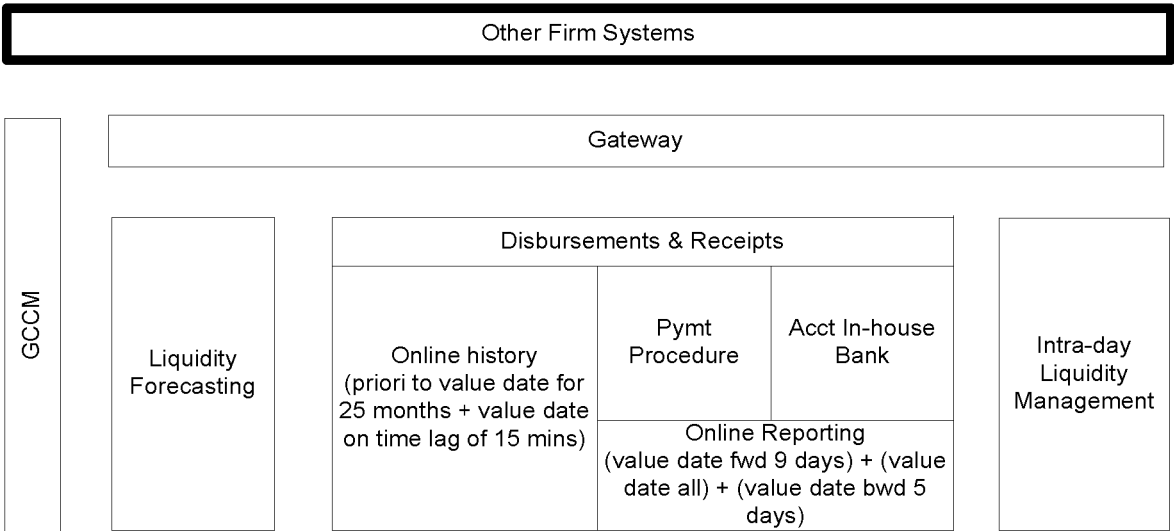
Ref	Description	Priority
8.1	Operating 24 by 7	M
8.2	Operating 24 by 6	H
8.3	No noticeable system screen latency in Tokyo, Frankfurt, London and New York	H
8.4	200,000 external movements per day	H
8.5	500,000 internal movements per day	M
8.6	Database replication to a DR served based in Frankfurt should occur nightly	H

- Performance issues, slow down in processing times - additional capacity available to be brought on stream by tech within 30 mins

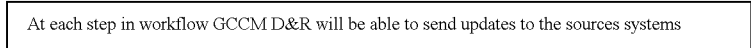
10. Appendices

10.1. Workflow model for GCCM.

10.1.1. Overview of GCCM



## Diagram of Payment Engine



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**10.1.2.1. Initial Suggested Statuses for Payment Engine**

As a payment/receipt request is processed by GCCM, the status of the item at every stage will be transmitted back to the originating source system or the individual. The following details the validations and the status at each stage from input to the release of the payment.

WEB Based	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
Manual Input	Save as 'Provisional Status'	Account	Pass			Provisional	
			Fail			Repair Required	
		CCY	Pass				
			Fail			Repair Required	
	Save as 'Input Complete'			Start looking for GARM and lookup SSI		Assign SSIs	
		Garm Id field not blank and validate	Pass			Pending Approval	
		Garm Id is blank	Fail			Assign SSIs	
	Cancel					Pending Cancellation	
	Cancel (Approved)					Cancelled	
	Repair					Provisional	
Approval stage	Save as '1 <sup>st</sup> Stage Approval Status					1 <sup>st</sup> Stage Approved	
	Repair					Provisional	
	Cancel					Pending Cancellation	
	Cancel (Approved)					Cancelled	
	Save as '2nd Stage Approval Status					2nd Stage Approved	
	Repair					Provisional	

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WEB Based	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
							fix request
	Cancel					Pending Cancellation	
	Cancel(Approved)					Cancelled	
	Save as '3rd Stage Approval Status			Auto Move to GATEWAY		3rd Stage Approved	
	Repair					Provisional	Originator has to fix request
	Cancel					Pending Cancellation	
	Cancel(Approved)					Cancelled	
Gateway		Required data elements	Pass	Send to Import			
			Fail	Send error message back to originating system or originator of request			
		Optional data elements	Pass	Send to Import			
Import		Simple Check	Pass	Generate unique ref and send status back to originator		Pending Processing	
			Fail	Generate unique ref and Send Error Message back to originator		Pending Amendment	Fix and send back with unique ref
		Complex Check	Pass	Generate unique ref and send status back to originator		Pending Processing	
			Fail	Generate unique ref and Send Error Message back to originator		Pending Amendment	Fix and send back with unique ref
<b>Validation</b>							
Data Integrity		1. Invalid Beneficiary 2. Invalid GARM id or no SSI's	Pass (NO)	Continue with remaining validation checks	Pass Data Integrity	<i>No Need to Publish</i>	

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WEB Based	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
		3. Invalid CCY calendar for CCY 4. Invalid CCY 5. Amount is zero	Fail (YES)	Send error back to originator of request or originating system with unique id	Fail Data Integrity	Pending Amendment	Originator to fix and send back
Payment Quality Check		1. Invalid BIC codes 2. If BIC not present, check for valid clearing codes 3. If 'account with bank' is blank or not Swift code??	Pass (NO)	Continue with remaining validation checks	Pass Payment Quality	<i>No Need to Publish</i>	
			Fail (YES)	Send error back to originator of request or originating system with unique id	Fail Payment Quality	Pending Amendment	Originator to fix and send back
Escalation (Approval at account level or business line still has to be determined)		Request - Internal	Pass/ Fail	Continue with remaining validation checks	Pass Escalation	<i>No Need to Publish</i>	
		Request - External at account level	Pass	Continue with remaining validation checks	Pass Escalation	<i>No Need to Publish</i>	
			Fail	Suspend all payments and postings	Fail Escalation	Pending CCM approval	CCM Approval Required
					Pass Escalation	<i>No Need to Publish</i>	CCM Approved
		Request - External at Business Line Level	Pass	Continue with remaining validation checks	Pass Escalation	<i>No Need to Publish</i>	
			Fail	Suspend all payments and postings	Fail Escalation	Pending CCM approval	CCM Approval Required
					Pass Escalation	<i>No Need to Publish</i>	CCM Approved
Compliance Checking		1. Is it a restricted country	Pass (NO)	Continue with remaining validation checks	Pass Compliance	<i>No Need to Publish</i>	
		2. Is currency restricted 3. Is institution a casino or money exchange 4. Is travel rule complete 5. Others (to be enumerated elsewhere)	Fail (Yes)	Suspend all payments and postings		Pending CCM/CAD Approval	CAD Approval  CCM Approval



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WEB Based	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
					Pass Compliance	<i>No Need to Publish</i>	CAD/CCM Approved
Funding Deadline		By currency validate receipt time of request to the cut-off time table; check if business account is on the override cut-off	Pass	Go check value date Continue checking other validations	Pass Funding cut- off	<i>No Need to Publish</i>	
			Fail	Send errors back to originator of request or originating system	Fail funding cut-off	Past cut-off time	
		Check value date and if it is Back-value	Pass (NO)		Pass Funding cut- off	<i>No Need to Publish</i>	
			Fail (YES)	Send notice back requesting approval	Fail funding cut-off	Pending Approval	Approval from originator; continue with other validations
					Pass Funding cut- off	Pending CCM Approval	Originator Approval received; CCM approval required
<b><i>Pending Amendment s</i></b>							
	Cancel			Wait for confirmation of cancellation		Pending Amendment	
	Confirm Cancellation			For details, see BRD		Cancellation Confirmed	
	Reject Cancellation			Proceed as normal		Rejected Cancellation	
	Amend					Pending Amendment	Make amendments and save amendments
	Confirm Amendment			See BRD for details		Amendment Confirmed	
	Reject Amendment			Proceed as normal		Rejected Amendments	

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WEB Based	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
<b><i>All Fails Fixed</i></b>							
		Validate at point of failure again		<b><i>When fails are fixed and resubmitted</i></b>			
			<b><i>Pass all validati ons</i></b>	<b><i>Pass to Funding and Outgoing</i></b>		Pending Assignment of External Account	
<b><i>Funding</i></b>							
Identify Real World Nostro Account				RW Nostro Account identified		Pending Message Generation	
<b><i>Outgoing</i></b>							
Intraday Release	User select items for Netting or Split				Pending Netting/Split	Pending Release	
	<i>Netting</i>			Perform Netting	Netted	Netted	If user wants to Un-net
	<i>Un Netting</i>			Remove net id		Pending Release	
	Release – Manual or Auto			Perform the release of payments		Payment Sent	
Matching				<i>Every item will be unmatched</i>	Unmatched		
		Auto Match	Pass	Process Accounting, associated funding and settlement or request. Send status message back to originator		Settled	
			Fail	Send to Unapplied Queue		Unmatched	
			Pass	Process Accounting,	Manual Match	Settled	

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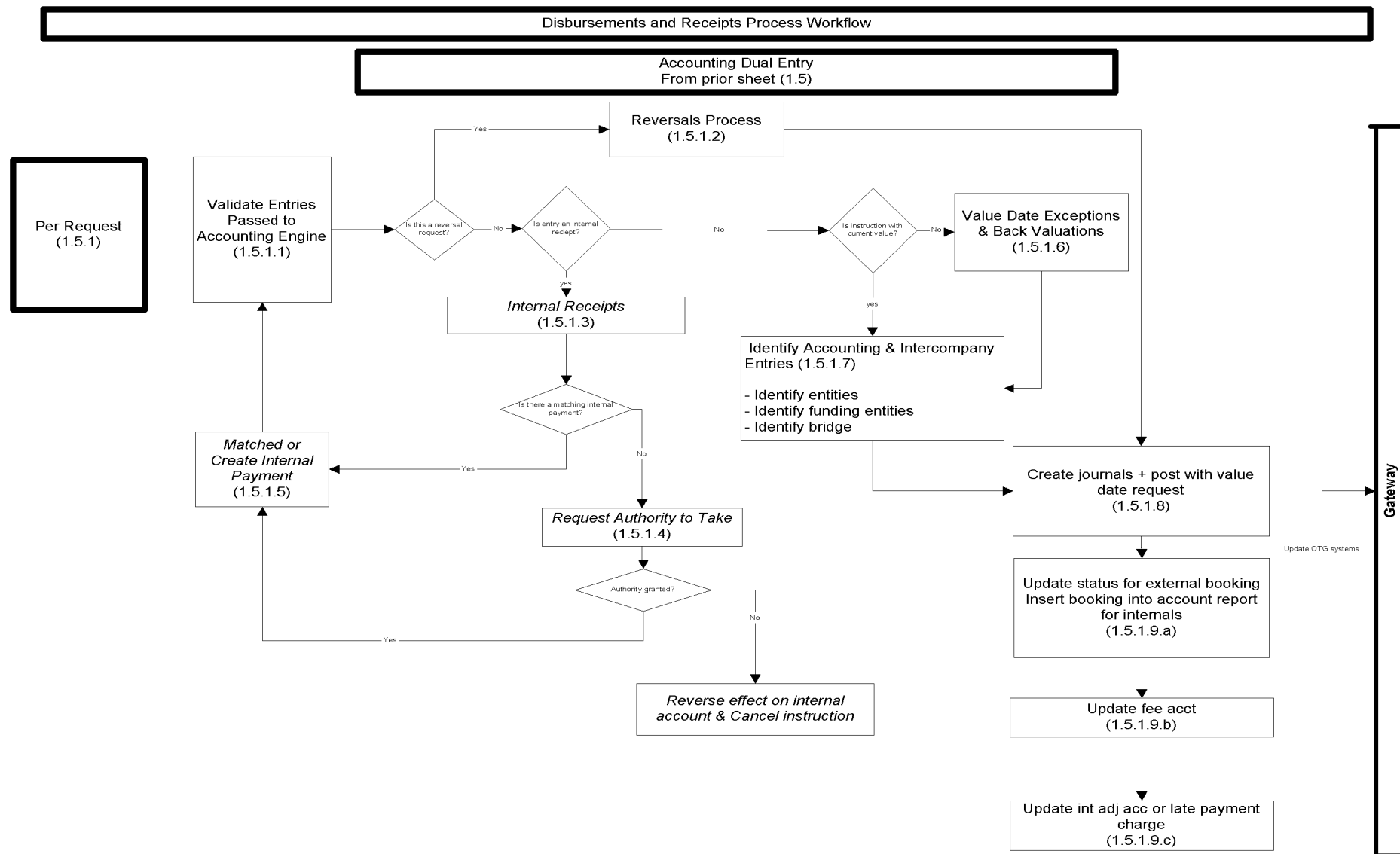
WEB Based	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
		Manual Match		associated funding and settlement or request. Send status message back to originator			
			Fail	Send to Unapplied Queue		Unmatched	
	If previously matched, and then unmatched			Reverse any accounting and place in pending queue.		Unmatched	
	Applied/Unapplied Funds user selects items to create GCCM records		Pass	Process accounting for the control account, suspense. Send 'Settled message back to originator'	Manual created entries	Settled	
<b>After Release</b>							
MINT or SWIFT				Store with the related payment request	ACK received; NAK received		
Bank Confirmation				<i>Every payment sent would have awaiting confirmation</i>		Awaiting Confirmation from bank	
		900 and 910 received	Pass (MATCH)			Confirmation Received from bank	
			Fail (NO MATCH)			Awaiting Confirmation from bank	

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### 10.1.3. Overview of Accounting

#### 10.1.3.1. Diagram of Accounting per Request



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**10.1.3.2. Initial Suggested Statuses for Accounting Per Request**

During the accounting processing, there will be validations performed and each status must be retained. The following details the validations and the status at each stage from input to the release of the payment.

Accounting	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
Identify Funding Relationship		Legal entity of debit account = Legal entity of credit account		One journal, a debit and credit entry, with the same legal entity.		Journals Created	
		Legal entity of debit account ◇ legal entity of credit account		Create journals, minimum of 3 with potential maxium of 4		Journals Created	
		Funding entity of debit account = Funding entity of credit account					
		Legal entity of debit account ◇ legal entity of credit account		Use the real world account/debit account to identify Funding entity. Go thru Funding entity relationship entity to get pair off with Funding entity for internal or credit account		Journals Created	
		Funding entity of debit account ◇ Funding entity of credit account		Create journals, minimum of 4 and max of 6			
			Failed	After going thru the entity relationship for the debit account and no DBS accounts found	Funding Entity missing	Funding Bridge Not Found	User to update the account static table. Resubmit for accounting entries
Payments		Business Account or Real World Nostro Account	Pass		Accounting Statics Passed		
			Fail	Send to Accounting Repair Queue	Accounting Statics Failed	Insufficient accounting data	<ul style="list-style-type: none"> <li>Add/modify missing account to account static</li> </ul>

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Accounting	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
							<ul style="list-style-type: none"> <li>table.</li> <li>Use screen to change in accounting repair queue and resubmit for accounting.</li> </ul>
		Value Date = current date but currency is a Holiday		Process with value date requested on payment instruction			
		Value Date < than current date and currency is not a Holiday of currency		Flag as backvalue if not done previously.  Restate balances and calculate BV interest expense			
		Currency of payment = currency of account			Accounting currency Passed		
		Currency of payment <> currency of account		Flag currency not same as account  This will be used for the FX piece of accounting			
Internal Receipts		Check the credit account(?) to see whether there is an offsetting entry	Pass (Yes)	Link the 2			
			Fail (No)	Check if the debit account is on the pre-advice and there is offsetting entry	Link the 2		
				Debit Account on preadvice but NO offsetting entry		Awaiting debit entry approval	CCM emails owner to request authorization to pass debit entry to account
	Authorization received			<ul style="list-style-type: none"> <li>Create the payment and accounting entries</li> <li>Link the 2</li> </ul>			
	Reject			Do nothing			
				Debit Account NOT on			CCM emails the credit

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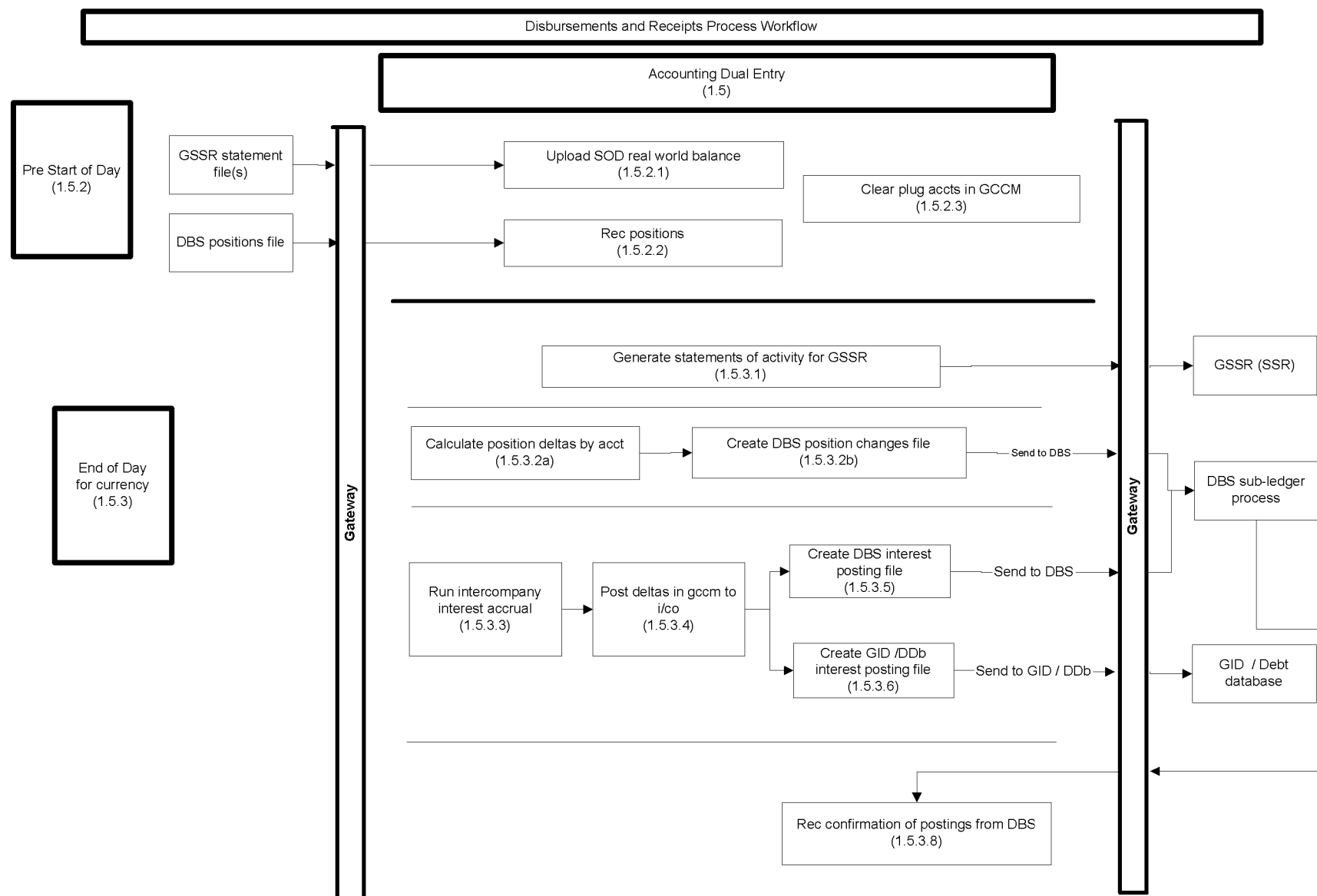
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Accounting	User Action	Validation	Pass/ Fail	System Action	Internal System Status Comment	Published Status Comment	User Action
				pre-advice			account owner to request entry to be resubmitted  When resubmitted; mark OLD delete and just use the NEW??  Sounds reasonable so yes
All Failed Accounting						Pending Accounting Amendments	
	Amend account numbers	Re-validate	Pass	Move to create accounting entries		Accounting Passed	
			Fail			Pending Accounting Amendments	Fix and resubmit
	Resubmit to Accounting	Re-validate	Pass	Move to create account entries			
			Fail			Pending Accounting Amendments	Fix and resubmit
UPDATE Balances						Accounting posted	

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### 10.1.3.3. Diagram of End of Day Accounting and Start of Day Reconciliation

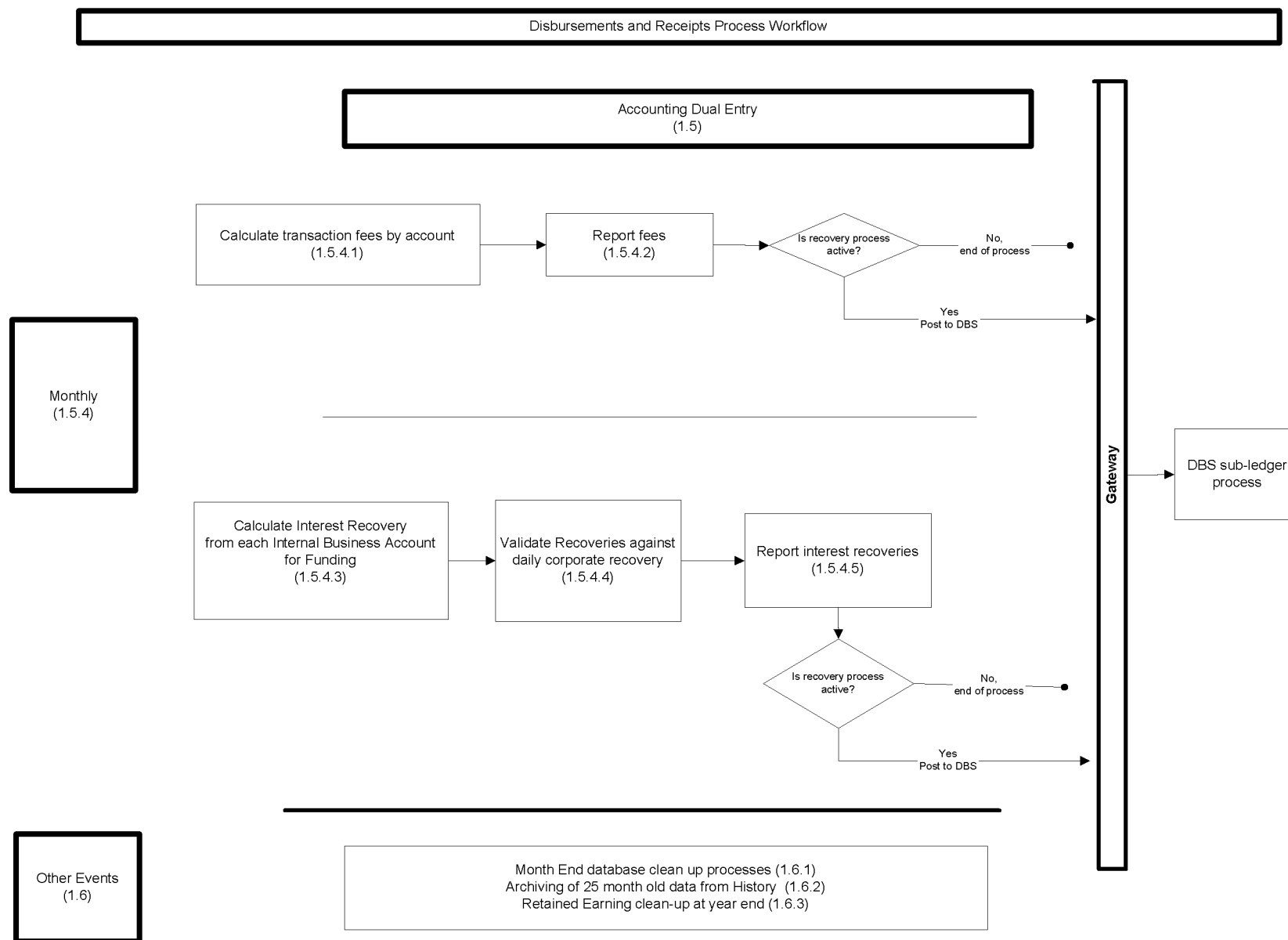




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### 10.1.3.4. Diagram of End of Month Processes



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## 10.2. Accounting Examples

### 10.2.1. Payment on Behalf of Business – LBHI for LBSF

LBSF		LBHI	
ASAP / ITS	GCCM		Real World Agent Bank for LBHI
P&L in LBSF		LBHI Nostro	
Dr	Cr	Dr	Cr
100 (a)		100 (b1)	
LBSF Internal Business Account		LBHI Intercompany with LCPI	
Dr	Cr	Dr	Cr
	100 (a)	100 (b1)	
LBSF Intercompany with LBHI		LBSF Internal Business Account	
Dr	Cr	Dr	Cr
	100 (b1)	100 (b1)	

- a) LBSF has interest payable to customer (as a result of interest rate swap) and requests Treasury to pay
- b1) Journal entry to i/co account in LBSF for LBHI representing payable to LBHI
- b1) Journal entry to i/co account in LBHI for LBSF representing payable to LBHI
- b2) LBHI pays to customer

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**10.2.2. Internal payment between LBI and LBIE**

MTS		ITS		GCCM					
Trading Book in LBI		Trading Book in LBIE		LBHI Control Nostro					
Dr	Cr	Dr	Cr	Dr	Cr				
100 (a)			100 (a)	100 (d)	100 (b)				
LBI Control Nostro		LBIE Control Nostro		LBHI Intercompany with LBI		LBHI Intercompany with LBHI UK		LBHI UK Intercompany with LBIE	
Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr
	100 (a)	100 (a)		100 (b)			100 (d)		100 (f)
				LBI Intercompany with LBHI		LBHI UK Intercompany with LBHI		LBIE Intercompany with LBHI UK	
Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr
					100 (c)	100 (e)		100 (g)	
				LBI Control Nostro		LBHI UK Control Nostro		LBIE Control Nostro	
Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr
				100 (c)		100 (f)	100 (e)		100 (g)

- a) LBI trades with LBIE and settles 'cash' rather than intercompany between entities direct
- b) Journal entry to i/co account with in LBHI representing receivable from LBI
- c) Journal entry to i/co account with in LBI representing payable to LBHI
- d) Journal entry to i/co account with in LBHI representing payable to LBHI UK
- e) Journal entry to i/co account with in LBHI UK representing receivable from LBHI
- f) Journal entry to i/co account with in LBHI UK representing payable to LBIE
- g) Journal entry to i/co account with in LBIE representing receivable from LBHI UK
- h) Reconciliation of all control and intercompany accounts

BRD

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- ◆ Net result is LBI has increased payable to LBHI, LBIE has reduced payable to LBHI UK Branch rather than a direct intercompany position between the two regulated entities.
- ◆ Treasury and Reg. Controller groups monitor intercompany positions real time to ensure both regulated entities do not have unsecured receivables from the funding entities and minimise trapped cash positions

BRD

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### **10.3. *ADDENDUM to the GCCM BRD***

#### **10.3.1. Security:**

GCCM will implement the following security features

1. Wherever possible, use a secured way of communicating with the source systems. Not all the source systems are on the standard platform. An effort should be made in long run to bring these systems on to the standard messaging platform.
2. As users will be accessing GCCM using a web based interface, GCCM will use Lehman's single sign-on method in order to leverage the LehmanLive authentication integration services.

#### **10.3.2. Entitlements:**

Entitlements will further restrict users to perform certain operations within GCCM. Users will be grouped into functional groups such as "Operations", "Managers" to enforce certain restrictions at approval levels. Furthermore, it is possible to restrict the user from accessing certain screens.

As of this writing, assessment is currently underway to determine the suitability of using ELMO.

#### **10.3.3. Feeds:**

As each payments comes to the Gateway from each of the source systems, the transaction will be stored in a repository.

GCCM will send these payments through the validation process and any failed items will be sent to the repair queue whereas the successful items will be released from GCCM to the agent banks.

Through each stage of process within GCCM, a message will be sent back to each source system of the state of each payment.

In addition, as part of the end of day GCCM process, there will be a reconciliation of released payments to the payments residing in the repository. A report will be generated for any differences and emailed to the appropriate parties.

BRD

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#### **10.3.4. Auditing**

GCCM will be using a comprehensive logging framework to enable debugging and auditing. Each action taken by the user will be tracked by timestamp and activity. Furthermore, as each payment moves thru the payment processing channel, the state of the transaction will be recorded. For example, if an item failed a transaction escalation limit, it will record the failure and a CM approval is required. When item is approved, it will track the approver user id, timestamp.

#### **10.3.5. Additional bullets:**

##### **10.3.5.1. Inter company paths:**

There will be a funding entity tree showing each entity's parent and path. Their position on the tree represents the funding structure rather than its actual position in firm's legal entity structure.

This will allow finding of inter company relationships for the creation of accounting entries.

##### **10.3.5.2. Reconciliation process:**

There will be 2 reconciliation processes to be undertaken:

1. As part of the Start of Day process, a reconciliation of the DBS account balances to the GCCM account balances will be performed.

BRD

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2. There will be a reconciliation in GSSR of the bank accounts against the RWN accounts in GCCM and each individual's source system in house accounts with GCCM in house account balances. Any differences will be brought into GCCM and reported as a 'REC' item.

**10.3.5.3. Credits/Debits and Daily Nets:**

The tables storing the end\_of\_day balances will be in debits/credits accounting signage conventions. In other words, debits will be positives and credits will be negatives. The intraday/eod of day generation of journals will always have a credit and a debit entry. Therefore, on an individual transaction, the sum of all the journals will be zero. Systematically, at the eod of the day, there will be a check to make sure that the sum of credits and debits for the day's activities will be zero.

**10.3.5.4. Unsecured receivables for regulated entities:**

There will be an indicator on the legal entity table stating that an entity is a regulated entity. On a daily basis, GCCM will provide a warning message on the real-time balance viewing as well as end of day reports for showing the "Due From" accounts and their respective amounts for each regulated entity. CCM will have to act on this by paying down these receivables so that the regulated entity at the end of the month will have 'Due From' outstanding of zero.

11. Approval & Sign-off

List names of the senior representatives who will sign off this document, both for the requirements section and the service level agreement.

Department/Role	Name	Signature	Date
SPOCS			



BRD

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Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements

December 31, 2007

**1. Operations**

Lehman Re Ltd. (the "Company") was incorporated on April 1, 1998 under the laws of Bermuda to underwrite property and casualty, as well as life and annuity, insurance and reinsurance. The Company was capitalized and commenced operations on June 1, 1998. The Company offers customized products organized around three areas: finite and structured financial solutions, property catastrophe reinsurance and life and annuity reinsurance. The Company utilizes brokers and intermediaries to source both insurance and reinsurance business. The Company is a wholly-owned subsidiary of Lehman Brothers Holdings Inc. ("Holdings" or "parent company"). On December 12, 2007, its wholly-owned subsidiary, Zen Limited, which was incorporated in Bermuda, was dissolved. On May 11, 2007, the Company acquired Congress Life Insurance Company ("Congress"), a life insurance company licensed in 42 states and Washington D.C from JP Morgan Insurance Holdings LLC for \$9.4 million to provide structural advantages as an operating platform for the Company. 119

The Company is also subject to a Bermuda Act of Parliament, Lehman Re Ltd. Act, 1998 (the Act). The Act provides for the creation of legally separate accounts for the conduct of insurance business. The Company does not have any such accounts.

The Company has a Net Worth Maintenance Agreement with the parent company. Under this agreement, the parent company commits to maintain the Company's minimum solvency margin as required under the laws of Bermuda. If the Company does not have the liquidity necessary to enable it to meet its current obligations on a timely basis, the parent company shall (in a mutually satisfactory manner) provide the Company with liquidity needed to enable it to meet its obligations in a timely manner. The obligations of the parent company to provide liquidity shall not include those liabilities arising from separate account business (unless expressly agreed), including but not limited to all risk contracts, policies and event linked financial instruments. The agreement may be terminated in the future by either party.

**2. Significant Accounting Policies**

These consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States. All intercompany transactions have been eliminated. Significant accounting policies are as follows:

Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**2. Significant Accounting Policies (continued)**

**Losses and Loss Adjustment Expenses and Future Policy Benefits**

A reserve for losses and loss adjustment expenses is established for estimated unpaid claims and claim adjustment expenses on reported losses as well as estimated losses incurred but not reported. The liability is based on reports and individual case estimates received from ceding companies as well as management estimates of ultimate losses. Inherent in the estimates of ultimate losses are expected trends in claim severity and frequency and other factors, which could vary significantly as claims are settled. Accordingly, ultimate losses may vary materially from the amounts provided in the financial statements. These estimates are reviewed regularly and, as experience develops and new information becomes known, the reserves are adjusted as necessary. Such adjustments, if any, are reflected in results of operations in the period in which they become known.

Future policy benefits under traditional life and annuity contracts are estimated based upon expected investment yields and assumptions relating to mortality, morbidity, terminations and expenses applicable at the time the contracts are issued. These assumptions are based on the ceding company's experience as well as industry experience and standards and include a margin for adverse deviation. The assumptions vary with the characteristics of the plan of insurance, year of issue, age of insured and other appropriate factors. The liability for future policy benefits represents the present value of future benefits and expenses to be paid in excess of the present value of future net premiums to be received. Rates for discounting future cash flows are based upon the United States dollar and British pound sterling swap curve, and range between 3.50% and 7.37%.

Reinsurance recoverable on future policy benefits have been recorded net of reinsurance premiums payable on contracts, which accrue interest, where the right of offset exists, and credit allowance.

**Cash and Cash Equivalents**

Cash and cash equivalents include highly liquid investments not held for resale with maturities of three months or less.

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Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

2. Significant Accounting Policies (continued)

Fair Values

Investments and financial instruments owned, and Reinsurance liabilities are recognized on a trade-date basis and are carried at fair value. See note 3, "Fair Value of Financial Instruments."

Investments and Financial Instruments

***Mortgage Backed Securities and Government and Agencies*** The Company's mortgage backed securities and government and agencies are classified as trading securities and are carried at fair value with unrealized gains and losses reported in earnings as a component of net gain on investments. Fair value of investments is generally based on listed market prices, where available. If listed market prices are not available, fair value is determined based on other relevant factors, including broker or dealer price quotations and valuation pricing models which take into account time value and volatility factors underlying the financial instruments. For additional information regarding fair value, see Note 3, "Fair Value of Financial Instruments," to the Consolidated Financial Statements.

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***Derivatives and Other Contractual Agreements*** Derivatives are financial instruments whose value is based on an underlying asset (e.g., Treasury bond), index (e.g., S&P 500) or reference rate (e.g., LIBOR), and include futures, forwards, swaps, option contracts, or other financial instruments with similar characteristics. A derivative contract generally represents a future commitment to exchange interest payment streams or currencies based on the contract or notional amount or to purchase or sell other financial instruments or physical assets at specified terms on a specified date. In the normal course of business, the Company enters into derivatives and other contractual agreements for trading and non-trading purposes.

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Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**2. Significant Accounting Policies (continued)**

Derivatives for trading purposes are valued at fair value in the Consolidated Balance Sheets on a net by counterparty basis where a legal right of offset exists and changes in fair values are recorded as net gain or loss on investments in the Consolidated Statements of Income. Derivatives often are referred to as off-balance-sheet instruments because neither their notional amounts nor the underlying instruments are reflected as assets or liabilities of the Company. Instead, the market or fair values related to the derivative transactions are reported in the Consolidated Balance Sheets as assets or liabilities, in Derivatives and other contractual agreements, as applicable. Fair value is generally determined by pricing models. Pricing models utilize a series of market inputs to determine the present value of future cash flows with adjustments, as required, for credit risk and liquidity risk. Credit-related valuation adjustments incorporate historical experience and estimates of expected losses. Additional valuation adjustments may be recorded, as considered appropriate, for new or complex products or for positions with significant concentrations. These adjustments are integral components of the mark-to-market process. For additional information regarding fair value, see Note 3, "Fair Value of Financial Instruments," to the Consolidated Financial Statements.

Prior to January 1, 2007, the Company followed Emerging Issues Task Force ("EITF") Issue No. 02-3, *Issues Involved in Accounting for Derivative Contracts Held for Trading Purposes and Contracts Involved in Energy Trading and Risk Management Activities* ("EITF 02-3"). Under EITF 02-3, recognition of a trading profit at inception of a derivative transaction was prohibited unless the fair value of that derivative was obtained from a quoted market price, supported by comparison to other observable inputs or based on a valuation technique incorporating observable inputs. Subsequent to the transaction date, the Company recognized trading profits deferred at the inception of the derivative transaction in the period in which the valuation of the instrument becomes observable. The adoption of SFAS 157, *Fair Value Measurement* (SFAS 157) nullified the guidance in EITF 02-3 that precluded the recognition of a trading profit at the inception of a derivative contract, unless the fair value of such derivative was obtained from a quoted market price or other valuation technique incorporating observable inputs. For further discussion of our adoption of SFAS 157, see "Accounting and Developments—SFAS 157" below.

The Company utilizes derivative products for non-trading purposes as an end-user to modify the interest rate characteristics of its future policy benefits.

Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**2. Significant Accounting Policies (continued)**

Under SFAS 133, *Accounting for Derivative Instruments and Hedging Activities*, as amended by SFAS No. 138 and SFAS No. 149, *Accounting for Certain Derivative Instruments and Certain Hedging Activities* (collectively, SFAS 133), the accounting for end-user derivative activities is dependent upon the nature of the hedging relationship. In certain hedging relationships, both the derivative and the hedged item will be marked-to-market through earnings for changes in fair value (fair value hedge). In many instances, the hedge relationship is fully effective so that the mark-to-market on the derivative and the hedged item will offset. Any hedge ineffectiveness in this relationship is recorded in policy claims and benefits in the Consolidated Statements of Income.

**Identifiable Intangible Assets**

Identifiable intangible assets with indefinite lives are not amortized. Instead, these assets are evaluated at least annually for impairment.

**Repurchase and Resale Agreements**

Securities purchased under agreement to resell and securities sold under agreement to repurchase are trade financing transactions recorded at their contracted resale or repurchase amount. It is the Company's policy to take possession of securities purchased under agreements to resell. The Company compares the market value of the underlying positions on a daily basis with the related receivable or payable balances, including accrued interest. The Company requires counterparties to deposit additional collateral or return collateral pledged, as necessary, to ensure the market value of the underlying value remains sufficient. Accrued interest is included in accrued investment income, with unrealized gains and losses reflected in net investment income in the Consolidated Statements of Income.

**Income Taxes**

We account for income taxes in accordance with SFAS No. 109, *Accounting for Income Taxes*. We recognize the current and deferred tax consequences of all transactions that have been recognized in the financial statements using the provisions of the enacted tax laws. Deferred tax assets are recognized for temporary differences that will result in deductible amounts in future years and for tax loss carry-forwards. We record a valuation allowance to reduce deferred tax assets to an amount that more likely than not will be realized. Deferred tax liabilities are recognized for temporary differences that will result in taxable income in future years.

Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**2. Significant Accounting Policies (continued)**

Contingent liabilities related to income taxes are recorded when probable and reasonably estimable in accordance with SFAS No. 5, *Accounting for Contingencies*.

For a discussion of the impact of FIN 48, *Accounting for Uncertainty in Income Taxes—an Interpretation of FASB Statement No. 109* ("FIN 48"), see "Accounting Developments —FIN 48" below. The Company elected to be treated as a U.S. domestic insurance company for U.S. federal tax purposes, and is therefore, subject to income taxation in the U.S.

**Foreign Exchange**

Assets and liabilities denominated in non-U.S. dollar currencies are translated at foreign exchange rates in effect at the consolidated balance sheet dates. Revenues and expenses denominated in non-U.S. dollar currencies are translated into U.S. dollars at rates prevailing when the income was earned or expenses incurred. The resulting gains and losses from translating foreign currency transactions into U.S. dollars, net of hedging gains or losses, are included in net gains on investments account in the Consolidated Statements of Income.

**Use of Estimates**

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Although estimates are considered to be fairly stated at the time the estimates are made, actual results could vary materially from those estimates.

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**Reclassification**

Certain prior year amounts have been reclassified to conform to the 2007 presentation.

**Accounting Developments**

**SFAS 157.** In September 2006, the FASB issued SFAS 157. SFAS 157 defines fair value, establishes a framework for measuring fair value, outlines a fair value hierarchy based on inputs used to measure fair value and enhances disclosure requirements for fair value measurements. SFAS 157 does not change existing guidance as to whether or not an instrument is carried at fair value.

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Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**2. Significant Accounting Policies (continued)**

SFAS 157 also (i) nullifies the guidance in EITF 02-3 that precluded the recognition of a trading profit at the inception of a derivative contract, unless the fair value of such derivative was obtained from a quoted market price or other valuation technique incorporating observable inputs; (ii) clarifies that an issuer's credit standing should be considered when measuring liabilities at fair value; (iii) precludes the use of a liquidity or block discount when measuring instruments traded in an active market at fair value; and (iv) requires costs related to acquiring financial instruments carried at fair value to be included in earnings as incurred.

The Company elected to early adopt SFAS 157 at the beginning of our 2007 calendar year and we recorded the difference between the carrying amounts and fair values of (i) stand-alone derivatives and/or certain hybrid financial instruments measured using the guidance in EITF 02-3 on recognition of a trading profit at the inception of a derivative, and (ii) financial instruments that are traded in active markets that were measured at fair value using block discounts, as a cumulative-effect adjustment to opening retained earnings. The Company did not realize any impact as a result of adopting SFAS 157. For additional information regarding our adoption of SFAS 157, see Note 3, "Fair Value of Financial Instruments".

**SFAS 159.** In February 2007, the FASB issued SFAS 159, *The Fair Value Option for Financial Assets and Financial Liabilities* (SFAS 159) which permits certain financial assets and financial liabilities to be measured at fair value, using an instrument-by-instrument election. The initial effect of adopting SFAS 159 must be accounted for as a cumulative-effect adjustment to opening retained earnings for the calendar year in which we apply SFAS 159. Retrospective application of SFAS 159 to calendar years preceding the effective date is not permitted.

The Company elected to early adopt SFAS 159 beginning in our 2007 calendar year. The adoption of SFAS 159 had no impact on the Company's historical financials statements.

**FIN 48.** In June 2006, the FASB issued FIN 48, which sets out a framework for management to use to determine the appropriate level of tax reserves to maintain for uncertain tax positions. This interpretation of SFAS 109 uses a two-step approach wherein a tax benefit is recognized if a position is more likely than not to be sustained, and the amount of benefit is then measured on a probabilistic approach, as defined in FIN 48. FIN 48 also sets out disclosure requirements to enhance transparency of an entity's tax reserves. The Company must adopt FIN 48 as of the beginning of our 2008 calendar year. The adoption of FIN 48 had no impact on the Company's financial statements.



Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**2. Significant Accounting Policies (continued)**

**FSP FIN 39-1.** In April 2007, the FASB directed the FASB Staff to issue FSP No. FIN 39-1, *Amendment of FASB Interpretation No. 39* ("FSP FIN 39-1"). FSP FIN 39-1 modifies FIN No. 39, *Offsetting of Amounts Related to Certain Contracts*, and permits companies to offset cash collateral receivables or payables with net derivative positions under certain circumstances. FSP FIN 39-1 is effective for calendar years beginning after November 15, 2007, with early adoption permitted. FSP FIN 39-1 does not affect the Consolidated Financial Statements because it clarified the acceptability of existing market practice, which we use, of netting cash collateral against net derivative assets and liabilities.

**FSP FIN 48-1.** In May 2007, the FASB directed the FASB Staff to issue FSP No. FIN 48-1, *Definition of "Settlement" In FASB Interpretation No. 48* ("FSP FIN 48-1"). Under FSP FIN 48-1, a previously unrecognized tax benefit may be subsequently recognized if the tax position is effectively settled and other specified criteria are met. The Company is evaluating the effect of adopting FSP FIN 48-1 on the Consolidated Financial Statements as part of our evaluation of the effect of adopting FIN 48.

**3. Fair Value of Financial Instruments**

Investments and financial instruments owned, and reinsurance liabilities, are presented at fair value. Fair value is defined as the price at which an asset or liability could be exchanged in a current transaction between knowledgeable, willing parties. Where available, fair value is based on observable market prices or parameters or derived from such prices or parameters. Where observable prices or inputs are not available, valuation models are applied. These valuation techniques involve some level of management estimation and judgment, the degree of which is dependent on the price transparency for the instruments or market and the instruments' complexity.

Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**3. Fair Value of Financial Instruments (continued)**

Beginning January 1, 2007, assets and liabilities recorded at fair value in the Consolidated Balance Sheets are categorized based upon the level of judgment associated with the inputs used to measure their fair value. In accordance with SFAS 157, the valuation techniques used for assets and liabilities accounted for at fair value are generally under the income approach. Income approach valuation techniques convert future amounts, such as cash flows or earnings, to a single present amount, or a discounted amount. These techniques rely on current market expectations of future amounts. Examples of income approach valuation techniques include present value techniques; option-pricing models, binomial or lattice models that incorporate present value techniques; and the multi-period excess earnings method. This approach described within SFAS 157 is consistent with generally accepted valuation methodologies. The valuation method considers the definition of an exit price and the nature of the asset or liability being valued and significant expertise and judgment is required. Hierarchical levels – defined by SFAS 157 and directly related to the amount of subjectivity associated with the inputs to fair valuation of these assets and liabilities – are as follows:

Level I – Inputs are unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date.

Level II – Inputs (other than quoted prices included in Level I) are either directly or indirectly observable for the asset or liability through correlation with market data at the measurement date and for the duration of the instrument's anticipated life.

Level III – Inputs reflect management's best estimate of what market participants would use in pricing the asset or liability at the measurement date. Consideration is given to the risk inherent in the valuation technique and the risk inherent in the inputs to the model.

An asset or a liability's categorization within the fair value hierarchy is based on the lowest level of significant input to its valuation.

Fair value of investments and financial instruments owned, and reinsurance liabilities at December 31, 2007 were:

Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

3. Fair Value of Financial Instruments (continued)

	At December 31, 2007			
	Level I	Level II	Level III	Total
Investment and financial instruments owned:				
Mortgage backed securities	\$ -	\$ 73,871,386	\$ -	\$ 73,871,386
Government and agencies	-	5,044,541	-	5,044,541
Derivatives and other contractual agreements	-	51,332,754	-	51,332,754
Total investment and financial instruments owned	\$ -	\$ 130,248,681	\$ -	\$ 130,248,681
Reinsurance liabilities	\$ -	\$ -	\$ 4,637,024	\$ 4,637,024
Total reinsurance liabilities	\$ -	\$ -	\$ 4,637,024	\$ 4,637,024

The table presented below summarizes the change in balance sheet carrying value associated with Level III financial instruments during the calendar year ended December 31, 2007. Caution should be utilized when evaluating reported net revenues for Level III Financial instruments. The values presented exclude economic hedging activities that may be transacted in instruments categorized within other fair value hierarchy levels. Actual net revenues associated with Level III financial instruments inclusive of hedging activities could differ materially.

	Balance December 31, 2006	Net Payments, Purchases and Sales	Net Transfers In (Out)	Losses (Gains) <sup>(1)</sup> Realized Unrealized	Balance December 31, 2007
Reinsurance liabilities	\$ -	\$ 3,315,658		\$ 1,321,366	4,637,024

<sup>(1)</sup> The current period losses (gains) from changes in values of Level III financial instruments represent losses (gains) from changes in values of those financial instruments only for the period(s) in which the instruments were classified as Level III.

<sup>(2)</sup> The unrealized losses (gains) is reflected in other expense line of the consolidated statements of income.

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Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**7. Reinsurance**

In the ordinary course of business the Company cedes certain risks to other companies. These reinsurance contracts do not relieve the Company from its primary liability should any reinsurer be unable to meet its obligations. Failure of reinsurers to honor their obligations could result in losses to the Company. The Company evaluates the financial condition of its reinsurers to minimize its exposure to significant losses from reinsurer insolvencies.

At December 31, 2007 and 2006, reinsurance recoverable was net of reinsurance premiums payable in the amount of, approximately, \$117.1 million and \$125.6 million, respectively and an allowance for reinsurance recoverable in the amount of \$2.5 million and \$2.5 million, respectively.

The effect of reinsurance on premiums written, premiums earned and losses incurred and policy claim benefits is as follows:

	Premiums Written		Premiums Earned	
	2007	2006	2007	2006
Assumed – Property & Casualty (non-affiliate)	\$ 75,969,396	\$ 14,594,299	\$ 61,192,554	\$ 10,377,356
Assumed – Property & Casualty (affiliate)	1,015,417	1,515,000	1,071,178	1,513,274
Ceded – Property & Casualty	(75,969,396)	(12,766,048)	(61,189,307)	(9,118,132)
Net	<u>\$ 1,015,417</u>	<u>\$ 3,343,251</u>	<u>\$ 1,074,425</u>	<u>\$ 2,772,498</u>

	Losses Incurred and Policy Claim Benefits	
	2007	2006
Assumed – Property & Casualty	\$ 10,112,724	\$ 1,262,465
Assumed – Life & Annuity	13,054,322	9,448,079
Ceded – Property & Casualty	(10,112,724)	(1,262,465)
Ceded – Life & Annuity	(5,092,945)	(5,246,099)
Net	<u>\$ 7,961,377</u>	<u>\$ 4,201,980</u>

Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**9. Related Party Transactions (continued)**

In the ordinary course of business the Company uses services of other affiliates, mainly investment related. These amounts are unsecured, accrue interest at LIBOR, and are included in receivable from and payable to affiliates in the Consolidated Balance Sheets.

**10. Statutory Requirements**

The Bermuda Insurance Act 1978 and related regulations (the Act) requires the Company to meet a minimum solvency margin. Statutory capital and surplus as of December 31, 2007 and 2006 was approximately \$377.3 million and \$358.5 million, respectively, and the minimum amount required to be maintained by the Company was approximately \$100.3 million and \$100.3 million, respectively. The Company meets the minimum liquidity ratio, whereby relevant assets as defined by the Act, exceed 75% of relevant liabilities. In this regard the declaration of dividends from shareholder's equity is limited to the extent that the above requirements are met. No dividends were declared in 2006 and 2007. At December 31, 2007 and 2006, retained earnings and additional paid-in capital of approximately \$99.0 million and \$99.0 million, respectively, were not available for distribution.

The Bermuda Monetary Authority (the Authority) is introducing an electronic risk-based capital model, Bermuda Solvency Capital Requirement (BSCR or standard model), to Class 4 general business insurers. The Authority will maintain the existing solvency basis until the 2008 year-end. Under the provisions of Sections 29A and 29B of the Act, the Authority will require submission of the standard model and related financial reporting for the 2007 year-end. Effective December 31, 2008, Class 4 general business insurers will be required to hold total statutory capital and surplus exceeding the Enhanced Capital Requirement ("ECR") prescribed by the Insurance (Prudential Standards) (Class 4 Solvency Requirement) Order 2008 ("the Order"). Insurers will also be expected to hold a safety margin or buffer above the ECR, at least in total equivalent to 120% of ECR ("Target Capital").

Congress is subject to certain Risk-Based Capital ("RBC") requirements as specified by the National Association of Insurance Commission (NAIC). Under those requirements, the amount of capital and surplus maintained by Congress is to be determined based on the various risk factors related to it. At December 31, 2007, the Company meets the RBC requirements. Statutory capital and surplus of Congress amounted to \$56.5 million in 2007. Without prior approval of the Director of the Arizona Department of Insurance, dividends and distributions to shareholders are limited to the net gain from operations or 10% of surplus of Congress, whichever is less. At December 31, 2007, net gains from operations of approximately \$0.07 million, were available for distribution. There were no dividend payments in 2007.

Lehman Re Ltd. and Subsidiary

Notes to Consolidated Financial Statements (continued)

**11. Commitments and Contingencies**

At December 31, 2007 and 2006, the Company held cash collateral of \$343.6 million and \$61.1 million, respectively, for the purposes of securing potential obligations of its reinsurers.

At December 31, 2007 and 2006, the Company had investments of approximately \$73.9 million and \$133.3 million, respectively, and securities purchased under the agreements to resell of approximately \$182.0 million and \$185.0 million, respectively, that were held in trust accounts for the benefit of ceding companies.

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DZ

	<i>Filing</i>	<i>Dividend Payments</i>						
Date	10/5/2008	4/17/2012	10/1/2012	4/4/2013	10/3/2013	4/3/2014	10/2/2014	Total
<i>LBCC Dividend Rate</i>		25.66%	17.04%	10.34%	23.26%	11.11%	12.59%	100.00%
LBCC Dividend Payments		\$22,479,350.68	\$14,930,791.01	\$9,061,448.38	\$20,382,052.67	\$9,735,354.64	\$11,032,002.62	\$87,621,000.00
<b>Post Petition Interest - GCCM Rate</b>	<b>5.37875%</b>	<b>\$4,572,602.40</b>	<b>\$3,473,028.95</b>	<b>\$2,408,333.11</b>	<b>\$6,099,948.22</b>	<b>\$3,248,391.21</b>	<b>\$4,070,465.86</b>	<b>\$23,872,769.75</b>
<b>Post Petition Interest - English Statutory Rate</b>	<b>8.00000%</b>	<b>\$7,026,732.05</b>	<b>\$5,369,540.16</b>	<b>\$3,748,834.93</b>	<b>\$9,559,555.66</b>	<b>\$5,125,544.06</b>	<b>\$6,467,018.10</b>	<b>\$37,297,224.96</b>